The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 72, No. 13 CHICAGO, ILLINOIS MARCH 29, 1919

GENITAL DEFECTS AND VENEREAL DISEASES AMONG THE PORTO RICAN DRAFT TROOPS

HERMAN GOODMAN, B.S., M.D. (NEW YORK)
First Lieutenant, M. C., U. S. Army; Officer in Charge, Venereal Infirmary

CAMP LAS CASAS, PORTO RICO

The calling to the colors of 12,000 men between the ages of 21 and 31, nearly all natives of Porto Rico, gave an opportunity to study the genital defects and venereal diseases, including syphilis, prevalent in one of the West Indian islands where syphilis is supposed to have had an early start.

Especial interest should be manifested in the report of syphilis among the troops, as evidenced clinically, and by the Wassermann reaction taken as a routine on bakers and cooks. The Wassermann reports were in accord with the clinical findings in every case of secondary syphilis, and in cases of primary syphilis in which the draining lymph nodes were enlarged. In the latent tertiary cases, negative Wassermann reports were returned in only six cases that treatment with mercuric salicylate in grain doses weekly for six weeks provoked a positive reaction. It might be well to note that in every case the only information the laboratory had was our serial number. We believe, from correlating the clinical findings with the laboratory reports, that the latter are trustworthy as indicating syphilitic infection, and do not hesitate to base conclusions on them.

PORTO RICO

In the report of his observations on the skin diseases of Porto Rico, King[1] gave a brief description of the climate and people of Porto Rico, because few persons have any adequate idea of the place, and it would afford readers a better appreciation of the diseases under discussion. King, who is a trained observer and has spent many years on the island, said:

> Porto Rico, lying on the eighteenth degree of latitude, comes within the geographic boundaries of the "tropics," and the prevalent American idea, fed by popular fiction, pictures the West Indies with a hazy mixture of extreme heat, palm trees, and scantily clad "natives," with dread diseases of all kinds lurking in all corners.
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> In Porto Rico palm trees are plentiful, to be sure, but the climate, while warm, is tempered by sea breezes along the coast and by the altitude in the interior. It is seldom sultry, even in the hottest months, and the summer averages cooler and more pleasant than in the United States. There being but comparatively slight difference between summer and winter, the climate is monotonous, and the uninterrupted warmth probably has important etiologic influences acting directly or indirectly through its effect on the susceptibility of the person, on the organisms which cause disease, or on the agencies which may transport disease.
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> The people of Porto Rico are descended from two principal sources: the European settlers, chiefly Spanish, and the slaves imported from Africa, the aboriginal element having been so nearly exterminated in the early days of colonization that it may practically be ignored. A fairly numerous foreign contingent is composed of Europeans and Americans, and a recent immigration of a few thousand negroes from other West Indian islands. We have, therefore, in Porto Rico a mixed population, the white race greatly predominating, the black race in much smaller number, and a large element of the mixture of the two races in varying proportion. The habits of the people and the conditions under which they live and work are those of the tropics rather than those of the temperate zones, and apparently most tropical diseases, including those of the skin, should find suitable conditions for development. At the same time, the island is not so far removed geographically, climatically or in other respects from temperate climes but that the diseases of those regions might also find conditions more or less suitable to them.

1. King, W. W.: Some Observations on the Skin Diseases of Porto Rico, J. Cutan. Dis. **35**: 459 (Aug.) 1917.

GENITAL DEFECTS

The present study was made from the adult men of such a population. The scrunity of admitting officers and the inspections after assignment to companies tended to put into the hands of the venereal officer a larger number of suspects than would ordinarily volunteer for consultation. It is not surprising, therefore, that almost 10 per cent. of the men of the command have been observed by this officer in the three months that the men have been in camp; 1,163 patients have been registered at the venereal infirmary.

Hydrocele is one of the most common genital defects found. It is almost an insular characteristic. The cause is variously given, but the prevalence of filariae is generally thought to be the etiologic factor. Fifty-two men came to the infirmary with hydroceles of various sizes. In not a few, it is no exaggeration to say that the scrotum hung as low as the knees. Strange to say, a hydrocele of more than moderate size, and usually bilateral, gives the Porto Rican no apparent discomfort. For many years the trousers made on the island allowed for the extra mass. Many men wear suspensories, as might readily be supposed, but more for appearance than for comfort.

Elephantiasis of the scrotum accompanies few of the cases of hydrocele. The *Filaria sanguinis-hominis* is the etiologic factor here as in hydrocele. Of course in men already passed as fit for military service by local boards, we did not see the enormous masses that once were scrota, and which old textbooks usually represent as being carried about in a wheelbarrow.

Varicocele has not been of common occurrence. In only two cases was this noted to be at all large, and in one of these there was an accompanying completely descended scrotal hernia.

Cryptorchism, or undescended testicle, was found in only one man. There was no palpable mass either along the canal or in the left half of the scrotum. There was no scar of operation or injury, and the man stated that he had never had more than one testicle. We classified this case as abdominal retention of testicle, left side. The man was, of course, accepted for service.

Phimosis was a common condition. In many cases the opening was extremely small and the flow of urine impeded. The preputial cavity became an accessory bladder, so to speak, from which the urine slowly found its way to the outer world.

Seven cases of cicatricial phimosis were recorded. Wassermann tests were always taken on these patients, but the results were negative.

One patient with gonorrheal urethritis had an exceptionally tight prepuce as a therapeutic obstacle.

Balanoposthitis is a common condition in phimotic cases; but we have noted, in addition, the almost universal disregard for cleanliness under the foreskin even when it can readily be withdrawn. The skin of the glans and the mucous surface of the prepuce become soggy, moist, eroded, and even ulcerated. We considered the possibility of the erosive chancre in these cases, have searched for *Spirochaeta pallida*, and have taken Wassermann tests repeatedly in these patients.

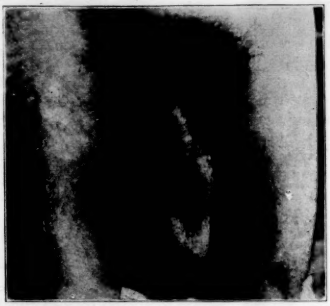


Fig. 1.—Hydrocele and elephantiasis of scrotum.

Paraphimosis we have recorded twice. Once it was a complication of acute gonorrheal urethritis.

Redundant prepuce is a relative term, to be sure, but all our men would be benefited by circumcision. In every individual examined, the entire glans was covered completely, and usually there was an inch to spare.

Operation was advised only in those cases of extreme phimosis in which it was not possible to expose the meatus urinarius. These men, we thought, were not safe for field duty.

One case of congenital stricture of the meatus urinarius was observed. Unfortunately for this man, the stricture was large enough to admit the diplococcus, although the tip of the urethral syringe was too large.

Urethral stricture was encountered only in those cases in which there were symptoms. In two of these the stricture had tightened down so as to admit only a filiform bougie. We are told that the urethra of the Porto Rican is almost as subject to excessive scar formation as that of the negro, and that stricture is locally regarded as part of the course of urethritis. We have not been able to confirm this statement.

Tinea cruris, or the eczema marginatum of the older writers, was encountered in only three cases. King thought that this is "a very common disease in Porto Rico and is seen with remarkable frequency in persons of excellent sanitary habits." He recognized the unity of this infection with the interdigital eczema recently popularized as Ormsby's tinea. We have diagnosed tinea of the crural region, armpits and toes in the same case.

Sebaceous cysts of the scrotum are common among these people. Although we registered only three at the infirmary, we have seen scores at our inspections that were never examined at the infirmary. The tumors are always multiple, and we have counted as many as seventy of all sizes on one man.

Pediculosis pubis was found twenty-four times in one regiment within a few days; recognizing an impending epidemic, we took measures that limited the ravages of the pediculus.

FRAMBESIA, OR YAWS

We recognized two cases of frambesia, or yaws, among the enlisted men. Each already presented the generalized eruption of crusts under which were the strawberry pulpy masses. The *Treponema pertenue* of Castellani was demonstrated in the lesions from both patients, and the Wassermann test was + + + + in both men. One patient was treated with 0.3 gm. of arsphenamin at weekly intervals for two weeks, and the lesions entirely receded. King "did not see the disease in its active stages nor encounter *Treponema pertenue*, although it was sought in the skin lesions of suspicious nature or history."

Captain Gutierrez, M. C., U. S. Army, tells us that he has records of seven cases, in not all of which, as we supposed should be the case, was the Wassermann test positive. The presence of concomitant syphilis must always be considered, but yaws is known to be one of the diseases that gives a "paradoxical" positive Wassermann test in the absence of syphilis.

REPORT OF CASE

The patient treated for yaws at the camp was a private, aged 24, who had been in service two months. He presented about twenty-six lesions, which were crusted, umbilicated and dry. Under the crusts was a moist, papular pulp. *Treponema pertenue* was demonstrated in smears. The Wassermann test, Aug. 7, 1918, was + + +; August 21, + + + +; September 13, + + + +. August 22, 0.3 gm. of arsphenamin was administered; August 28, 0.3 gm., and September 16, 0.4 gm. September 3, 1 grain of mercuric salicylate was given. The delay in initiating treatment was incident to the transfer of the patient to the base hospital and his return to the camp.

URETHRITIS

We were careful to instruct all company commanders to get their men who had or had had venereal disease to volunteer for treatment. If on future examination, they were told, venereal disease was disclosed, they would be punished. In this way many chronic cases were disclosed in which treatment was required. In a few cases, syphilis or gonorrhea was acquired prior to entry into the service, but the incubation time was spent in the camp. One case that had graver consequences than most was that of an accepted candidate for the officers' training camp. On the night before

the opening of the camp, he took his last "fling." He passed his initial examinations after entrance. About five days after, he noticed a serous discharge but laid it to the unaccustomed physical exertion. The primary stage of the urethritis passed into the purulent period and he was speedily taken from the ranks. The finding of the gonococcus of Neisser in smears shattered this man's hopes for a commission.

In a few cases, an unrecognized and not reported chronic urethritis developed acute exacerbation after varying periods of drill. These men were sent to the base hospital. If the man had had a pass since entry into service, it became a nice task to distinguish between a case of urethritis acquired prior to entry or since entry into the service, and hence General Order 45, 1914.

A number of men admitted to the army with venereal disease were immediately sent to the base hospital for treatment. Under the old laws of enlistment, these men would have been rejected; but the Selective Service Regulations wisely provided for unconditional acceptance in all cases of gonorrhea, acute and chronic, and of syphilis with remediable manifestations.

We hesitate to say that infection was acquired with intent to evade military service, but it is certain that at least 25 per cent. of these men acquired their infection between the time at which they learned they were going to camp and the time they actually arrived there. One thing that led to the belief that a venereal disease would disqualify for service was the fact that members of the officers' training camps were discharged from the camps if they developed gonorrhea or syphilis. In a circumscribed community as this island is, such discharges and the cause thereof speedily become public property among the registrants.

Fig. 2.—Chancre, ulcerative type.

One hundred and fifty-three cases of acute or subacute urethritis were registered. Of these men, ninety-eight with purulent, bacterial urethritis were sent to the hospital as incapacitated for field service. The subacute cases require a word further because in this island urethritis has an extended period of virulence. The reason is the universal practice of self treatment, for among all classes of society, the milk of the coconut is regarded as a specific for urethritis. "Coco de agua" is proclaimed by high and low alike, and it bears the recommendation of the very best medical authorities. The favorite prescription is a dram of Epsom salt placed into the opened nut and taken in the morning. The élite use a gram of sweet spirit of niter instead of the more proletarian Epsom salt. An average coconut contains 500 c.c. of fluid, so the therapy satisfies the thirst, irrigates from within, and the dram of magnesium sulphate has a physiologic effect on the bowels.

Of chronic cases of urethritis, we found 241 in camp. These men presented little or no discharge, had had urethritis, and the urine showed shreds, or was cloudy (not phosphates or carbonates). These men were found without treatment to develop an acute exacerbation following the drill and physical exercises of camp life.

These patients were treated daily except Tuesdays and Sundays. A card for each patient was kept with name, diagnosis and organization. The date and character of the treatment were entered on this card. When the urine became clear, this fact was noted. It was remembered that it takes at least 4 ounces of urine to wash the anterior urethra completely; also if the patient did not fill two glasses, it was not wise to give him credit for a clear urine because the patients soon learn to urinate a few moments before coming for the test, and the urine they do pass is clear. After a patient had five clear urines on five successive days or with a Sunday or Tuesday intervening, he was discharged from treatment, and allowed to have a pass. We were able to use in the treatment of these chronic urethritis cases potassium permanganate solutions varying from 1:1,000 to 1:3,000. In other cases we gave Ultzmann's solution of zinc sulphate, 2 gm.; lead acetate, 2 gm.; phenol, 2 gm., and water, sufficient to make 1,000 c.c.

All fluids injected into the urethra were a little above body heat. Glass urethral tips were sterilized by boiling each time used. In giving the irrigations for anterior urethritis, the irrigating can containing the fluid was not more than 2 feet above the level of the penis. The flow of fluid was interrupted so that it was not forced behind the constrictor muscle and so set up a posterior complication.

In only occasional cases did we find posterior urethral involvement. For these we gave retrojections of physiologic sodium chlorid solution, 2 per cent. boric acid solutions, or Ultzmann's solution in half or quarter strength.

SYPHILIS

The syphilitic lesions we have seen differ in no way from those seen in the United States. Of chancres, we have examined the small papular chancre; the papular necrosive chancre; the indurated ulcerative chancre (hunterian), and the erosive chancre. As often before demonstrated, the frenum is a point of lowered resistance to the entry of *Spirochaeta pallida*, and at least half our cases presented the initial lesion in this location. A fairly common type of initial lesion is presented by multiple lesions of the prepuce at its free border, a sort of rosette, accompanied by much edema. In one case a lesion within the preputial orifice gave rise to much suppuration. *Spirochaeta pallida* was demonstrated in this case, and arsphenamin therapy gave immediate results.

Patients were admitted to the service with the clinical diagnosis of primary syphilis who had passed the primary serologic stage and were in the "silent generalization stage" of syphilis: that is, presented chancre and no secondary lesions of skin or mucous membranes, but in whom the Wassermann test was reported $++++$.[2] We conceive of the local glands having been invaded by the syphilitic organism and from there having entered the general circulation through the medium of the major lymph channels. *Spirochaeta pallida* is free in the blood at this period, but no metastatic foci have had time to evidence themselves.

There were eighteen cases of recent secondary syphilis with generalized eruptions. The macular, the

2. Goodman: Diagnosis and Treatment of Syphilis in Men, Am. J. Syphilis 2: 344 (April) 1918.

maculopapular, and papular ulcerative lesions of the secondary period were all seen. Flat condylomas, mucous patches, and the split papule of the corner of the mouth were observed. In one case the flat condylomas extended along the raphe of the scrotum, along the ventral surface of the penis, and in the penile scrotal sulcus.

We found on the examination of the blood in 262 cases presenting scars of penile lesions, of healed buboes, or of ulcers of the lower leg or about the knees, that 108 had a + + + + Wassermann reaction. These cases we considered in the latent tertiary stage or the stage of potentially active syphilis. They were all treated.

Fig. 3.—Multiple chancre; rosette of lesions.

Many men examined volunteered the information that certain scars about the lower legs (clinically not syphilitic at all) were the result of syphilitic infection. Blood tests in these cases were negative. In fifty such instances the men were given mercuric salicylate for six weeks in 1 grain doses each week, after which another Wassermann test was taken. The mercury did not provoke a single positive result. We are led to agree with King, that of the numerous skin ulcers coming under notice in Porto Rico, the vast majority have seemed to be due to ordinary pyogenic infections.

Active tertiary lesions of the gumma type we have not seen at all. In one case a patient presented serpiginous ulcerating lesions of both palms. The Wassermann test was + + + + and there was ready response to arsphenamin therapy.

We did not expect to find in a selected group of men between 21 and 31 years of age the disfiguring, large, ulcerating lesions of late syphilis with which this island is supposed to abound.

We recognized one case of hereditary syphilis by the saddle nose. There was no history of infection, and the Wassermann reaction was + + + +; but neither teeth, eyes nor ears gave any indication of the syndrome of late hereditary syphilis.

We thought it would be interesting to obtain a syphilitic index, so to speak, of the command. For this purpose we took the blood Wassermann test on all the bakers and cooks. This test served also to determine the fitness of these men for their special duties.

The first series consisted of ten civilian cooks, and four had + + + + Wassermann tests. One other cook had a + Wassermann and a history of syphilis. This series indicated that the infection index of syphilis would be 50 per cent. The next series was 151 enlisted cooks. Of these, twenty-eight, or 18 per cent., gave a total inhibition of complement, and five more gave a + +. Another series of twelve civilian cooks was next tested, and three were positive. The difference of infection can be thought to be due only to the difference in age groups of the civilian and enlisted men. The latter were all under 31 years of age. The bakery unit was formed in camp, and according to regulations, the blood test was done on all its members. Sixty examinations were made, of which fifteen, or 25 per cent., were + + + or + + + +.

The total number of routine examinations of enlisted men was 211, with forty-three positive, or 20 per cent. The smaller series of civilians was twenty-two, of which six, or 27 per cent., were positive. In neither group do we consider in these summaries the inconclusive results of + or + + Wassermann reactions.

It is interesting to compare these figures with those of other sections of the United States. Pusey[3] says:

> The best estimates that we have in America come from some examinations of men in the public service. Reasoner, from a study of one regiment of the United States Army, estimated that 7 per cent. of the men were syphilitic. Bartlett, for another regiment, estimated that 10 per cent. were syphilitic.
>
> Vedder and Hough, from a valuable study of 1,283 cases in the government hospitals for men in the public service from all parts of the United States, estimate that 10 per cent. represents closely the prevalence of syphilis among men in the United States.
>
> Nichols of the United States Army, who has given great attention to the subject of syphilis in the army, believes that for the army as a whole the rate is something over 5 per cent. and, contrary to the common impression that syphilis has a high percentage in the army, he brings forward good reasons for believing that the prevalence of syphilis is not higher in the army than among men in general of the same age.

TREATMENT OF SYPHILIS

The cases we treat in camp are limited to the noninfectious cases by the orders of the Surgeon-General. This is as it should be, for, in the close association of camp life, it is best not to expose the healthy to the possibility of unmerited infection.

All patients with chancres and with the open lesions of syphilis are transferred to the base hospital. Opportunity for research of an advanced character is hardly given by a field service, but the safe and approved therapeutic procedures are all used. These are outlined in "The Manual of Treatment of the Venereal Diseases" and schematized in a circular of the War Department, Office of the Surgeon - General, Aug. 29, 1918.

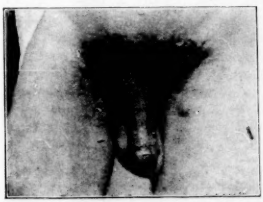


Fig. 4.—Condylomata lata in incision for syphilitic bubo.

In brief, they provide for the administration of arsphenamin (in our cases, arsenobenzol, Dermatological Research Laboratories) not oftener than once in five days, in dilution of 25 c.c. to the decigram, and in dosage of 0.1 gm. to each 30 pounds of body weight, for a course of six injections. Mercuric salicylate in 1 or 1½ grain doses intramuscularly once a week for nine weeks is given concomitantly with the arsphenamin injections. In our own series of cases, to the noninfectious Wassermann-positive, latent tertiary syphilitics we gave courses of mercuric salicylate injections of 1 grain doses for six weeks, rest for four

3. Pusey, W. A.: Syphilis as a Modern Problem, Chicago, American Medical Association, 1915.

weeks and repetition of the mercury course. A blood Wassermann test was always done at the beginning and close of a course. Patients with recently acquired syphilis, on return from the base hospital, were given courses of arsphenamin. Other patients who had had infectious lesions of syphilis just prior to entering the service were treated with arsphenamin to prevent secondary or recurrent secondary lesions.

There should be no more difficulty in treating syphilis in the field than in any well regulated outpatient hospital service; in fact, it should be much less difficult because of the control of the men which the army affords. Intravenous therapy is feasible, and with proper preparations of the apparatus, freshly distilled and boiled water, patient without the previous meal, and with the bowels clear, there should be no reactions.[4]

MEASURES FOR THE PREVENTION OF VENEREAL DISEASES

After three months in camp, during which time the number of enlisted men rose from 250 to 12,000, only nine new cases of venereal disease were acquired. We are proud of this low number among a population so recently under military control. A high standard was set and no infections among soldiers was the aim. To this end, every measure advised by the Committee on Venereal Diseases in its "Program of Attack on the Venereal Diseases" was carried out. The campaign against incapacitating soldiers by avoidable diseases deserves a separate paper, but the broad outline may briefly be given here.

Fig. 5.—Hereditary syphilis

No passes for enlisted men were issued until the facilities at the venereal infirmary for prophylaxis had been established. The character of the order permitting passes was suggested by the venereal officer at the company commanders' meeting when the matter was brought up for discussion. Puerta de Tierra, in guide books called a suburb of San Juan, was declared out of bounds for both officers and enlisted men. The sanitary or rather lack of sanitary conditions, the prevalence of all sorts of diseases, the breeding place for every epidemic on the island, it may fitly be called "the place that God never knew." Closing this part of the island has certainly helped to keep down the venereal rate. Passes to San Juan and adjacent towns were limited to daylight except to married men whose families lived in these towns. Passes to more distant parts could be issued for over night. The number of men allowed passes was put at 25 per cent. of the command.

A personal inspection of cities and towns within sixty miles of the camp was made on the first Saturday and Sunday that the men were given freedom, and the conditions were found to be so bad that a campaign to exterminate prostitution was planned. As a forerunner of the power of the military authorities to close cities to men in uniform, Maniti was declared out of bounds to enlisted men. In this city more than seventy prostitutes were known to the police, and forty-eight were registered at the police office. In the streets on which these women lived, a policeman pointed out to the investigator eight houses with the assurance that he could find pleasure within.

The aid of the attorney general and the chief of the insular police was enlisted, and by a concentrated movement of both these officials, prostitutes who had formerly all been tolerated, even though known and registered at local police stations, were arrested and sentenced to six months or one year in jail. Heretofore, short sentences of fifteen days or fines had been imposed. This action on the part of the civilian officials took place one week after the pass order was given, so it will be seen that the possibility of infection was immediately reduced. It should be added that the first week of freedom immediately preceded a pay day, and the majority of the men were without funds. As the police cleaned up town after town, conditions about the island became much better. A uniform was avoided by the "ladies of light living," and the facilities for prophylaxis were not taken advantage of for good reasons.

Characteristic of all movements for the better, San Juan, the largest city of the island and nearest to the camp, was the most backward in this elimination of evil. The principal papers were actively antagonistic toward the efforts for cleanliness. Editorially and otherwise, adverse criticism was heaped on the crusade to prevent infection among present and future soldiers. The camp surgeon was instrumental in having the order prohibiting enlisted men going to San Juan except on official business. This order came out on the Friday preceding a pay day and a Labor Day holiday.

Here are a few figures to show the extent of the socal evil in San Juan: At the time that inspection and regulation were in vogue, more than 1,500 women were inscribed public prostitutes. At the time the "5 mile" law went into effect, some 600 left the city and its environs for other parts of the island. By June, more than 250 of these had returned to San Juan. During the entire campaign from July to September 17, only forty-two women were arrested, and of these only twenty-six were sentenced. During the two weeks that the city was closed to soldiers, forty-eight women were arrested by the federal authorities who, until that time, had taken no action under the federal law which had already been extended to include a 10 mile zone about cantonments and camps.

Preceding and during all this campaign, efforts to reach the public through the press were initiated. Many articles were published through the medium of the Police Women's Reserve Corps, formed under our immediate supervision. Much credit for awakening the local chapters of the American Red Cross, the Council of National Defense, the W. C. T. U., and the purely local societies, such as the Ministers' Union, to the pressing need, must be given to Mrs. Edith Hildreth, who publicly sponsored the "Clean up your town" campaign.

4. Compare Goodman: Preparation of Solutions of Salvarsan and Arsenobenzol for Intravenous Use, New York M. J. **107**: 1122 (June 15) 1918.

Within the camp, education of officers and men was attempted. The cadets of the Third Officers' Training Camp and the officers of each of the three regiments were addressed with particular reference to personal requirements. The prevalence of venereal disease, the danger of illicit intercourse, the "slacker" element of "taking a chance," the true value of medical prophylaxis, the advisability of continence, and its compatibility with perfect health were all given in a talk straight from the shoulder in language that the line officers could understand. The colonel of the regiment was present in each instance and voiced his approval. Material for talks to the men by the officers was also given at these meetings.

Pamphlet 43 of the American Social Hygiene Association[5] was distributed to the enlisted men in camp who could read, with directions to read it aloud to those of their tentmates who could not read.

The Y. M. C. A. sent a man down from the United States for a short stay, who brought much literature in English. There was little enough circulation of this among a population in camp two thirds of whom could not read or write in their own language.

A vigilance society of San Juan contributed 3,000 copies of a letter to soldiers that urged continence and appealed to the Porto Rican soldier to uphold the high standards maintained by the United States troops abroad in the matter of venereal disease.

The Training Camp Activities Committee promised to send a Spanish reading edition of the film "Fit to Fight," but it was long delayed and has not yet reached us. The "Syllabus of an Address to Assist Company Commanders in the Instruction of Their Men in the Knowledge of Venereal Diseases" was distributed.

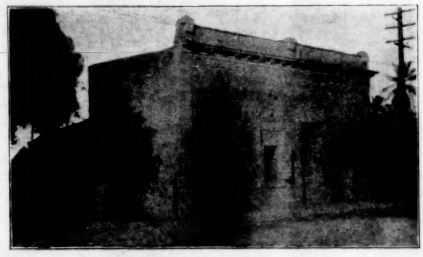


Fig. 6.—Present office

Prophylaxis facilities were available at the venereal infirmary, and an attendant was present on the days and evenings that the men were given passes. The number of prophylactic treatments was unusually low. We are not optimistic enough to lay all the credit to the difficulty of finding prostitutes and the disinclination of the latter to have any relations with the men in uniform, but undoubtedly both these factors were operating. Of course, here as in every place, the men depend on their own devices to prevent infection. We report, in our own short series of early treatments, failure to prevent two cases of urethritis. In one case, the urethritis developed in spite of prophylaxis administered eight and a half hours, and in the second case, ten hours after exposure. Riggs,[6] from a large experience, found that after eight hours the prophylactic treatments did not protect.

We are not unmindful of another factor that tended to keep our new venereal cases at a low level, namely, prohibition. This island has been "dry" since March, 1918, and, although a few of the private homes have liquor, it is kept for use at rare occasions. The strongest drink is a locally made near beer, Cervina, which contains only 2.5 per cent. of alcohol. It is sold with a license.

5. In Spanish, "Higiene Sexual para los Jovenes," a translation of Dr. W. T. Belfield's "Sexual Hygiene for Young Men."
6. Riggs: A Study of Venereal Prophylaxis in the Navy.

VENEREAL DISEASES AMONG PROSTITUTES

What the chances for infection among 12,000 men were, if the prostitutes had been at liberty, may be judged by this brief summary of the venereal diseases found among the latter:

Of 296 women at the Ponce district jail, one microscopic examination of the discharges from the urethra, cervix and vagina disclosed the gram-negative diplococcus in 263. Undoubtedly, repeated examinations of the forty-three negative cases will disclose further positive and infectious cases. (The arduous microscopic study was made by Dr. Yordan, attending physician to the district jail.) Of the same 296 women, forty-two had active infectious lesions of syphilis about the genitals. The clinical diagnosis was confirmed in all these cases by a positive Wassermann test. Among 254 women whose blood was taken whether or not they clinically gave evidence of syphilitic disease, 55 per cent. were ++++.

In a series of Wassermann tests from thirty-six women arrested by the federal authorities in San Juan, nineteen, or more than 52 per cent., were ++++ positive; eight gave an inconclusive reaction, and only seven, or 16 per cent., were negative. Of forty-five women examined from the same source, all except two gave unmistakable clinical evidence of specific urethritis and endocervicitis. More comprehensive reports of these women will be made at another time.

At the district jail of Arecibo, where some 290 women were examined, thirty-two were found to have infectious genital syphilitic lesions. Thirty-one of these thirty-two examined by the Wassermann test gave ++++ positives. The routine blood examination is now in progress. One case of yaws was seen at this institution, and treatment with arsphenamin initiated. More than 250 women at this hospital jail were getting daily vaginal irrigations, although reports on smears taken had not been reported.

THE VENEREAL INFIRMARY

Unfortunately, no provision had been made in the construction plans of the camp for a venereal infirmary, and the office was housed for a while in a space 14 by 23 feet designed for a regimental dental equipment of three chairs. For six weeks, five irrigating cans placed over a makeshift urinal served to treat our urethritis cases. Syphilitic patients were given mercury and arsphenamin on Tuesdays. Space here became too small, the number of patients visiting us disturbed the quiet of the regimental infirmary, and the room was needed by the dentists, so we moved to a latrine, 12 by 17 feet, in which we were able to put up sixteen irrigating cans and use the shower bath portion as an arsphenamin treatment room. Here we treated from 200 to 250 patients each day. A substantial concrete building next became our office.

One room, 12 by 12 feet, was used as the urethral irrigating room; and urinals, running water and connected plumbing (which last we now had for the first time) was installed by the Utilities Company under the direction of Lieutenant Bruno. Twelve patients could be irrigated at one time with this equipment. A second room, about 10 by 10 feet, was used to administer arsphenamin and to take blood for Wassermann tests.

The major portion of the equipment came from the Post Hospital, San Juan, which was discontinued. A water still was given on temporary memorandum receipt by the base hospital, San Juan. All in all, we are fairly well off, and have taken advantage of the facilities as fully as our limited personnel allows.

AN OPERATION FOR VARICOCELE

WILLIAM A. ANGWIN, PH.B., M.S., M.D.
Commander, Med. Corps, U. S. Navy
PHILADELPHIA

Varicocele is a frequent cause of disability in the naval service, not really so much because of its local disabling factors but more especially because of the

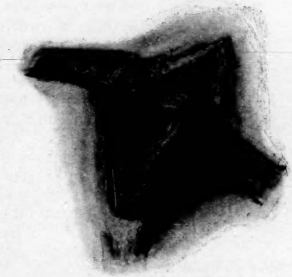


Fig. 1.—Exposure of external ring, cord and coverings by incision of overlying tissues.

complaints of a reflex nervous or psychic nature attributable to it. Occasionally a large varicocele is used as a means of avoiding unpleasant duty. On examination of applicants for enlistment, a large varicocele is considered officially to be sufficient cause for physical rejection. Size alone in varicocele is not necessarily an indication for operation. Some men with extremely large varicocele never have any symptoms referable to it. Others with varicocele of medium or small size have psychic disturbances or local pain far beyond the objective signs. Local pain, bearing down sensations, extremely low hanging testicles, psychic disturbances, anxiety or worry over a possible defective genital condition are sufficient warrant for operative procedure.

OPERATION

Step 1.—After the usual preliminaries and under either local or general anesthesia, an incision of 1 or 1½ inches is made in the skin over and down from the external inguinal ring, parallel to Poupart's ligament. This incision divides the superficial tissues and fascia and exposes the external ring and the cord with its coverings (Fig. 1). Superficial vessels are caught and ligated.

Step 2.—The cord is not lifted from its bed. The fascial coverings of the cord are lifted between two forceps and incised in the long axis of the cord (Fig. 2). The spermatic veins are thus brought to

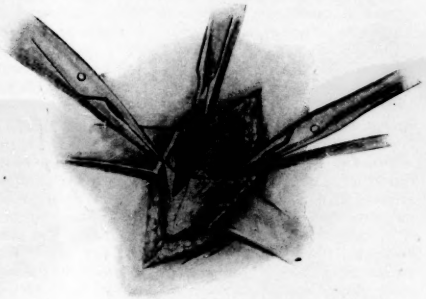


Fig. 2.—Incision of coverings of cord.

view without disturbing the vas and its accompanying vessels (Fig. 3).

Step 3.—The spermatic veins, including the spermatic artery, are gently picked up and cleared for a distance of 1½ or 2 inches. Inspection and gentle palpation will demonstrate the vas lying in its bed undisturbed and entirely separate from the exposed group of veins (Fig. 4). Crushing hemostats are applied about 1½ or 2 inches apart to the exposed spermatic vessels. Plain catgut ligatures are passed by needle through the substance of the cord proximal to the upper hemostat and distal to the lower hemostat, thus securely tying the cord with a nonslipping ligature. The intervening vessels are excised. The ends of these ligatures are left long.

Step 4.—The two ends of the upper ligature are passed through the fascial coverings of the cord, one end through the inner, the other end through the outer

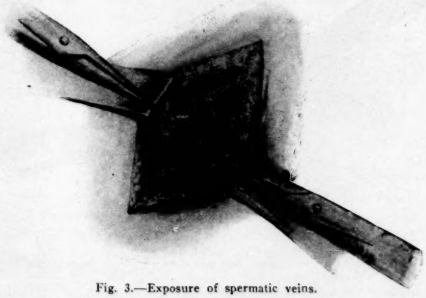


Fig. 3.—Exposure of spermatic veins.

side, and the two ends of the lower ligatures are also passed through but above the ends of the upper ligature, so that when the ends are pulled together, the cut ends of the cord are brought into close apposition (Fig. 5). The coverings of the cord are dropped back and the two upper and the two lower ligatures are tied over the incision (Fig. 6).

Step 5.—The superficial tissues are closed by routine methods, and a small dry dressing is applied.

Step 6.—Care must be taken to provide suspension of the testicles in order to prevent the postoperative swelling and the subsequent induration of the scrotal end of the cord.

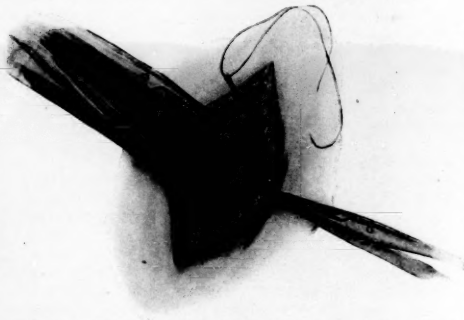


Fig. 4.—Raising up spermatic veins, disclosing vas lying in bottom of wound.

COMMENT

No priority is claimed for this method. An excellent description of a similar operation is found in Taylor's "Operative Surgery." Very few textbooks pay much attention to the cosmetics of varicocele or to the details of this simple operation.

There is no necessity for subjecting the vas and its accompanying vessels to trauma, yet most operative methods include as a step the lifting of the cord from its bed. This greatly increases the postoperative induration. Induration should be a rare sequela. In this method the tissues are subjected to a minimum of trauma. I have followed the principle of this method for a number of years in operating aboard ship for varicocele under local anesthesia without distress to

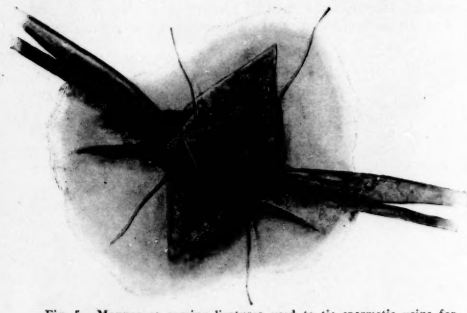


Fig. 5.—Manner of passing ligatures used to tie spermatic veins for closing cord covering.

the patient. Handling the vas is liable to be painful and makes complete anesthesia difficult.

The spermatic artery is excised with the spermatic veins, no attempt being made to separate it. Bevan[1] satisfied himself by a review of his own varicocele work, and by a review of experimental work on dogs to determine the blood supply of the tests, that there were two distinct and separate sources of blood supply for the testicles, namely, the spermatic vessels, and the other vessels accompanying the vas, either of which were quite sufficient to maintain the nutrition and the function of the organ.

I am indebted to G. V. Schwarz, the artist at Naval Hospital, Philadelphia, for the excellent illustrations of the operative steps.

U. S. Naval Hospital, Philadelphia.

1. Bevan: Surgical Clinics, p. 1103 (Dec.) 1918.

HOSPITAL STANDARDIZATION

WITH ESPECIAL REFERENCE TO MEDICAL EDUCATIONAL WORK IN HOSPITALS *

A. R. WARNER, M.D.
President, American Hospital Association; Superintendent, Lakeside Hospital
CLEVELAND

There are few social institutions progressing and changing so rapidly as hospitals. At the present time, therefore, "standardization," in the sense in which that word is usually used, which would mean the determination and use of types of institutions and types of work generally accepted as best, is clearly impossible. Types would be out of date long before they could become established. On the other hand, progress and enthusiasm have made many dissatisfied with conditions which are as yet quite general, and which should unquestionably be replaced by better methods. To those who have thought most about the problem, "hospital standardization" includes the setting of minimum standards; but this only as a minor feature. The majors are the development of the institution to meet more effectively and more efficiently in every way occasions for work from the front door to the ash pile. In this sense the word "standardization" will hereinafter be used. The hospital is a more complex institution than is commonly understood by trustees, managers and department workers, including the medical staffs. In fact, it is often a question if they have not become too complex to be managed successfully by superintendents now available. It is unusual for men to develop real interest in so many and so different human activities as a modern hospital must include.

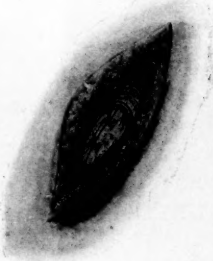


Fig. 6.—Closure of wound by tying of two sutures, as described in article by Dr. Angwin.

MULTIPLE FUNCTIONS OF HOSPITALS

It was not long ago that hospitals were merely institutions for the care of the ill, for the physicians. Then hospitals assumed the responsibility for educating and training professional nurses. We are more or less familiar with the expansion of hospitals as social institutions, not only in the development of the work generally called "social service" work, but also

* Read at the Fifteenth Annual Conference of the Council on Medical Education of the American Medical Association, Chicago, March 3, 1919.

in the work of the institutions in the broad general development of sociological progress. The words "reconstruction work" have come to have concrete meaning. There is today the responsibility to utilize to advantage the convalescent patient's idle time, in educational, Americanization or occupational study. There exists a responsibility to the patient's home and family. The various sociological institutions of an organized community are now holding hospitals strictly responsible for a cooperation in work and for a consideration and service to patients other than medical. There has also come the demand on hospitals to train and develop various types of technical workers, so that many hospitals now have definite courses of instruction for this purpose. This list includes institutional dietitians, anesthetists, technical laboratory workers, nurse maids for children, and a few others. The dispensaries (or outpatient departments) of hospitals were called such because the first institutions dispensed drugs on prescription to the worthy poor. The present diagnostic treatment and educational functions of dispensaries are late developments. Until very recently, outpatient service was confined strictly to the same worthy poor. Of late, however, the evening pay clinics have been developed which extend this service, particularly in the specialties, to the working man of small income. The present policy of the government in regard to venereal disease will necessarily write a new chapter in the development of dispensary work.

The standardization of a hospital means the standardization, development and balancing of all these activities: one measure cannot be applied to all. Certain limited groups, as the American College of Surgeons, limited in the sense that their part in the work of a hospital is limited, have become deeply interested in the problem and have, I believe, quite unfortunately called this ambition and the efforts to better conditions "hospital standardization." There have been corresponding ambitions in various other groups of hospital workers, as the nurses, the dietitians and social service workers, as well as other groups in the medical profession. It is obvious that the work of these various groups, which have no contact or common ground outside of the institution, should somehow be correlated, harmonized and utilized to the advancement of hospitals and hospital work. Some disinterested and impartial agency or organized group of agencies should be developed to accomplish this task, and to round out hospitals to meet better the needs of the various communities. In doing this, it is likely that hospitals will be divided into various types to meet the various needs; and then, as these various types become clearly and generally recognized, the practitioner and the public will not be misled as to the kind of service a given institution can be expected to render. All this is a tremendous task. Who should do it? It has seemed to many an established principle that it would be unwise for any department to attempt to standardize the whole. There are some who would adhere to this principle so closely as to feel the impossibility of establishing a standardization in medical departments, pathologic departments or laboratory departments which was developed by, or generally believed to be developed through, representatives of the surgical department. The nursing departments, the social service departments and others would not for valid reasons readily accept the standardization worked out by a medical department, or all the medical departments combined. If the task were a matter of simple standardization in the ordinary meaning of the word, an independent foundation or commission might undertake it; but the problem is too great and too varied, the ideals too indefinite, and progress too rapid to permit this. The agitation of any group, however, for minimum standards, for classification of work and for development will easily accomplish results more than justifying the effort, especially if a way can be developed to put into operation with some expediency the unquestioned recommendations for good.

As long as the American Hospital Association was simply a voluntary association of hospital administrators, little could be accomplished through this organization. At present, however, the American Hospital Association is in the process of transition to an association of hospitals as the constituent members comparable in every way to the national associations of various trades and industries. As soon as this transition is completed, this association will have the attention of hospital trustees and managers who are keenly alive to the advantages of a national association in any industry, and there will be established an organization which can theoretically at least put into effect by the pressure of influence and public opinion, if not by law, various reforms leading to more rapid advancement in minimum standards. It is the opinion of some also that through this association there can be worked out a classification or typing of hospitals, so that the type and the work in a given institution is fixed by minimum standards and is known to all. It is principally in the interest of the public and humanity in general that these changes should be brought about, yet this in no way lessens the benefits to the medical profession, or to other groups of workers or to the institutions themselves.

All efforts toward hospital standardization have a positive and direct effect on medical education, which is the topic of especial interest to this meeting and which must be standardized with the rest of the institution.

A frank discussion of medical education, as carried on by the hospital, strictly from the standpoint of hospital aims and strictly in the interest of hospital development, may help in the determination of common ground and in the standardization of this work. This paper represents such a discussion, so far as I am entitled and competent to write it.

RESPONSIBILITIES OF HOSPITALS

The modern hospital has direct responsibilities in the education of undergraduate medical students. Here, and here only, is clinical material collected together and combined with facilities for this work. It is probable that only a comparatively few hospitals will ever be called on to provide facilities of this sort, and few hospitals other than university hospitals can be used to advantage in this work. It is, however, clearly the duty of the institution which can be helpful in this way to accept this duty and carry on such activity. These hospitals do now and will in the future more sharply comprise one definite type.

In the last few years there has been a tendency to reduce greatly the amount of didactic instruction in the fourth year and to assign these students to ward work in hospitals. At Lakeside such students are called clinical clerks. They do not lodge in the institu-

tion, but spend practically the entire day on the wards at this work. It is unquestionably more effective to teach clinical medicine at the bedside, and the fourth year students may well be taught largely by this method; yet in order to carry this out satisfactorily there is the necessity of a sufficient number of class hours, ward walks, etc., to make the experience to these students in work comparable to intern experience extremely limited. The visiting physician or surgeon does not find them at all times available. The tendency, therefore, is to organize and carry on the routine work without them. They remain students only. The greatest value of such a system has been its service in establishing its own defects. It has demonstrated, first, that fourth year medical students are not yet in a position to secure maximum advantages from internship work. It has demonstrated the value of and need for more bedside instruction in order to develop an advanced generation of physicians. It has brought out the need for a required fifth year to be spent by all students strictly as interns on a general rotating service. This will permit further development in the fourth year instruction along lines of clinical pathology, ward walks, etc. After the fifth year spent as intern in general or rotating work, the student is prepared to undertake special work. It is my opinion, based on observation of the results at Lakeside, that it is unfortunate for fourth year medical graduates to go directly into special services, even to services limited to general medicine or general surgery. There is apparently more loss than gain, and until the fifth year is established it seems better that internships should invariably be general or rotating. This program of a fifth year will bring distinct betterment in hospital work, and hospitals are therefore interested in its adoption.

On the other hand, graduate medical instruction in some forms and to certain degrees is possible in every hospital and should be carried on to the maximum extent. Every hospital has this opportunity, and its responsibilities to society are not properly discharged until it does its best, at least in the matter of advancing the professional attainments of its staff and such other physicians as work in the institution. It may be that a hospital may not feel that it owes anything to its staff or to the medical profession as a whole. It may feel that the financial advantages to the staff are greatly in excess of the return by the staff to the institution, and this may be true; but this in no way discharges the responsibility of the institution to the future sick and to society to advance the medical skill of these men as far as possible, and to do this without thought or consideration of the benefit to the physician personally.

Another obligation on hospitals is the training of postgraduate medical students in the form of interns or fifth year students. Like many hospital activities at the present time, the value, excellence and efficiency of this work now varies greatly. The real purpose and justification of this system (better care for the future sick) is not always the controlling factor it should be in the practical working out of the plans. Too often it is considered, on the one hand, as a system to get routine hospital work done cheaply and, on the other, a benefit to the individual intern. There is an immediate value in this system to the intern and to the hospital, but this alone does not justify internships, and the young graduate in medicine certainly does not owe this service to hospitals. The internship must justify itself as service to medical progress, to better public health, and must be judged solely by this standard. There is the obligation on the medical schools to assume some responsibility in guiding their graduates in the selection of internships to insure maximum development of these graduates.

NUMBER OF HOSPITALS AND GRADUATES

The number of hospitals is increasing rapidly. The number of medical graduates is for the time being decreasing. The trend is such as to make it improbable if ever again the medical schools will produce enough graduates in medicine to provide interns for all, or even a large proportion, of the hospitals of the country. The internship as an essential organization of hospitals is gone, and substitutes for this system must be produced. It is certain that as the disparagement between the number of hospitals and the number of medical graduates increases, the tendency will be for interns to seek the educational opportunities offered by the larger, better equipped and more active hospitals, and quite properly so. A salary connected with an internship will not make good deficiencies in educational opportunities. With this in mind, it has been suggested that there be developed a specially trained nurse who knows something of anesthetics and laboratory work to take over intern work in the smaller, so-called "nonteaching hospitals." Such an arrangement would facilitate the "standardization" of internships for the better, assist positively the demarcation of types of hospitals, and open a new field for nurses. To the patient in the small hospital without well organized visiting staffs, it is a question between the trained nurse responsible actually and directly to the attending physician, and the raw, untrained intern with a new license to practice and a feeling that his first allegiance is to his dignity. Experience would lead some of us to choose the nurse.

If the final decision is what now seems probable, i. e., that the first year after graduation be spent in a general or rotating clinical hospital service, the number of hospitals that can be developed to offer attractive and sound educational opportunities for this year will undoubtedly exceed the number of medical graduates. After this first year of general clinical work, there should exist in a certain number of hospitals opportunity for specialization and opportunities wherein a student may spend from one to five years additional in special training either in general surgery, general medicine, or in any of the specialties. Only a limited number of hospitals will be able to carry on work of this nature. This number will be greatly increased over the number now engaged in this work by the general and lay recognition of the simple and accepted principle that surgery or any other specialty can be developed to higher skill by several years' residence in a hospital offering adequate facilities than by the more usual method of working into the specialty from general practice. If this is recognized by hospital trustees, the assuming of the obligation to develop future specialists by this method is assured. In order to accomplish this it may be necessary that at least the latter years of this training be based on fellowships that provide living expense; but the education of the general public in the value of this work will promptly produce the necessary funds, as it is unquestionably a wise investment for the philanthropic.

THE BASIS FOR COMPENSATION OF THE SOLDIER FOR CARDIAC DISEASE *

J. C. GITTINGS, M.D. (PHILADELPHIA)
Lieutenant-Colonel, M. C., U. S. Army; Chief of Medical Service
AND
BERTNARD SMITH, M.D. (LOS ANGELES)
Captain, M. C., U. S. Army; Chief of Cardiovascular Division
LAKEWOOD, N. J.

Nine months of experience on the disability board of General Hospital No. 9, where we have had unusual clinical opportunities for the study of patients suffering from various forms of cardiac disorder, have enabled us to draw some practical conclusions which may be of use to demobilizing boards.

The determination of disability hinges on diagnosis, so we may consider, in some detail, the classification of cases as they appear for discharge.

Functional cardiac disorder may be considered first. In this nomenclature, we have followed the revised manual of the Medical Department in preference to the other terms which are coming into more or less general use, such as "effort syndrome," and "neurocirculatory asthenia." The classification adopted covers various types under this heading, cardiac disorder functional, namely, constitutional inferiority; defective physical development; neurotic type; postinfectious type; postrheumatic type.

In the diagnosis of cases of cardiac disease the history is of the utmost importance and must be elicited with special care to avoid "suggestion." This was obviously necessary in dealing with the recruit who was desirous of avoiding service. At present, the danger seems less, since exaggerated claims of disability which existed prior to military duty tend to minimize the responsibility of the government and lessen the chances for compensation. With care, however, it is usually possible to arrive at a fairly accurate estimate of the soldier's physical and mental type before enlistment.

1. CONSTITUTIONAL INFERIORITY WITH CARDIAC DISORDER FUNCTIONAL

This general term is used to cover all forms of inferiority except that of chronic invalidism, which is of sufficient frequency to be given a separate heading as defective physical development.

These individuals give a history of more or less disability from earliest childhood, in which various illnesses may have played a rôle, but in the main they are essentially and primarily lacking in ambition, courage, energy, aggressiveness and endurance. As boys, they never played games requiring physical stamina, both because of a lack of the normal spirit of contest or sport, and because participation produced the syndrome which stamps the disorder. Usually there is associated mental deficiency in the sense that these patients appeared to be incapable of advancing beyond the lower educational levels under ordinary stimuli, and as they grew older were content with a low economic level in the job that made the fewest psychic and physical demands compatible with their economic needs.

Physical examination of such patients is essentially negative. Physical development usually is somewhat below normal, and the muscle strength as shown by the Martin test may be below the standard; but more often the defect is not physical in a strict sense. Subjectively they complain on exertion of dyspnea; an early sense of general fatigue; cardiac palpitation; precordial pain, distress or tenderness, and vertigo, in the order of their frequency and importance. The area of cardiac dulness is not increased, tested by physical examination and by roentgen ray and the electrocardiograph. The pulse rate is unduly accelerated by any physical exertion and usually by excitement, although the time for the return to the normal rate for the individual may not be greatly prolonged.

The first sound at the apex as a rule is exaggerated and short, often suggesting the snapping first sound of mitral stenosis. At times a suggestion of a presystolic thrill can be felt in the erect position, and it is not hard to imagine that a faint presystolic murmur is heard. In the supine position the presystolic factors quickly disappear in contradistinction to the accentuation usually found in true mitral stenosis.

In this connection, it is interesting to note that the presystolic element in normal heart sounds, which Dr. Wiggers of Cornell University Medical College has demonstrated by the phonocardiograph, is a plausible explanation of the thrill and murmur. Whatever their origin, it is noteworthy that they are felt and heard almost invariably in the individual with the thin chest walls, which so greatly facilitate sound conduction. This type also exhibits with great frequency the basal systolic roughening or bruit, heard best in the second or third left interspace close to the sternum, and more pronounced in the supine position.

Regardless of the type of the chest, a soft systolic apical murmur is usually heard, loudest in the supine position and not transmitted, while cardiorespiratory murmurs are more or less common. The point of maximum intensity may be pronounced, and is often diffuse, depending both on the type of cardiac contractions and on the resiliency and thickness of the chest wall.

These "constitutional inferiors" are essentially useless for military purposes. Under ordinary conditions of recruiting the majority would be recognized and rejected by experienced army surgeons, not so much on account of the cardiac condition, but because of their evident inaptitude for service. Whatever the claims of these patients may be, it is a perfectly fair assumption that their condition has not been made materially worse by army service, because they have instinctively avoided severe exercise on account of its results. The soldier of this class who reports at sick call, or enters the hospital within one month or less of the time of his induction or enlistment, cannot be said to have suffered any real harm from his military efforts, and disability should be rated below one tenth to exclude the individual from compensation.

2. DEFECTIVE PHYSICAL DEVELOPMENT WITH CARDIAC DISORDER FUNCTIONAL

In these patients we have a physical defect more or less in evidence. Of most frequent occurrence is the so-called habitus enteropticus—the chest of the "carnivorous" type with relaxation of the abdominal muscles, while those of the chest and limbs are poorly developed. Usually the muscle strength test falls below the normal limits, and general nutrition is poor. The early history resembles that of the constitutionally

* From U. S. Army General Hospital No. 9.

inferior type so far as it concerns the ability to indulge in physical exercise, but there is not the same pronounced lack of ambition. Very often they have had serious and numerous illnesses during childhood, which may have been etiologic factors in the maldevelopment. This type must be carefully differentiated from that which suffers from the cardiac syndrome accompanying active tuberculosis. A comparatively small number of our patients exhibited definite, arrested tuberculous lesions. From the history it was clear that this had been the most important factor in the defective development.

The individual of the "defective physical development" type has often been encouraged or compelled by his physician or his parents to lead an inactive life because of an evident lack of physical stamina, or a belief that the heart was not "strong." For the same reason, as he gets older he selects the occupation that requires the least physical exertion, but his ambition and intelligence as a rule compel a higher economic return than that accepted by the constitutionally inferior type.

The actual cardiac findings on physical examination differ in no material degree from those found in Class 1. The subjective symptoms are the same, although the early sense of fatigue often plays a more prominent rôle than dyspnea.

The marked instances of this type likewise are essentially useless for military purposes and should never have been passed for military service. As a class, however, they go farther without a breakdown than do the constitutional inferiors, and in many instances are entitled to compensation because the breakdown occurs after several months of military duty, and in all probability results therefrom. Any other physical exertion, however, of the same degree would have produced the same result.

Most of the men belonging to these two groups are total abstainers from alcohol, not from any moral reason but because the effect is unpleasant. Tobacco and coffee apparently bear no essential relation to their symptoms. In the laboratory studies these patients show abnormal responses to sympathetic stimulation, and various degrees of disturbance in the glands of internal secretion. They stand at attention with muscles relaxed and the weight of the body resting on the pelvis. Their coordination is poor and they cannot be persuaded or forced to make the full effort at any time. Consequently they show very slight gains in strength, even after several months of daily exercises. Such men seek any excuse to avoid physical exertion and are often falsely accused of malingering. Careful electrocardiographic studies often show pronounced changes in the sympathetic control, such as could easily give rise to the disturbing symptoms. This causes one to doubt the wisdom of forcing men so generally below par to make their full effort unless they are under very close observation.

The following are given as sample histories of cases in these groups:

CASE 1.—*Defective physical development.*—B., a soldier, aged 23, who had been in the service ten months and had performed no active duty, had had convulsions in infancy and had never been strong. His parents had been warned that he had a weak heart and that he must never be left alone. He had never walked over one mile a day. He had never taken any part in athletic games. He had had no serious illnesses. His parents were well. His mother was nervous. He had finished high school at 19. He had had no regular occupation. He always has had precordial pain, shortness of breath, and rapid, pounding pulse on slight exertion. He was easily fatigued. He had never fainted, but was dizzy on sudden change of position. The heart was normal in size. There was a soft systolic blow at the apex, standing, which disappeared on lying down and after exercise. Electrocardiograph showed a sinus arrhythmia; rate, standing, 112; lying, after fifteen minutes, 88; after exercising, 130. There was a slight tremor of the hands. The thyroid was palpable. There were no eye signs. The basal metabolism was normal. Strength: weight = 13.[1] After two months of daily exercises, strength: weight = 17.2. There was marked precordial tenderness.

CASE 2.—*Constitutional inferiority.*—S., aged 25, who had been in the service four months and on active duty three days, was still in the fourth grade in school at 16. He never could take part in any games or do any hard work on account of precordial pain, dizziness and fatigue. He had frequently changed work because of symptoms. He had worked as a rag sorter before service, and had earned $10 a week. He had been satisfied and had liked the work because he could sit down and take his own time. His mother was nervous. His father was alcoholic. One brother was epileptic. The heart was normal in size. There were no murmurs. There was no tenderness. The thyroid was not palpable. There was marked tremor and a slight lid-lag. The basal metabolism was normal. He could not learn to execute the command: "About face." He showed marked difficulty in all the balancing exercises. He knew little about the war. He did not read the newspapers because reading made him nervous. When he entered, strength: weight = 16.8.[1] After six weeks of daily exercises, strength: weight = 17.7.

At times we find an individual whose cardiac disorder is out of all proportion to his physical defects and who is far above the constitutional inferior in intelligence and ambition. His former occupation, selected without regard to his health, made so few physical demands that he was totally unprepared for the severe strain of military training. Overzealous drill sergeants, or the hurried demands for even untrained men in France, forced this soldier at a pace beyond his limited endurance. His cardiovascular system apparently broke under the strain in spite of undoubted courage and a will to carry on. In this type can be accomplished the most striking cures, in a literal sense, from graduated exercises. Such patients should not be discharged until ample opportunity for cure has been afforded.

3. CARDIAC DISORDER FUNCTIONAL, NEUROTIC TYPE

In this we have the clinical picture of the neurotic or neurasthenic individual whose phobias have been directed to the heart. Ambition and intelligence are not lacking to the same extent as in Class 1. In place of these we find nervousness, unrest and hypersensitiveness, with the cardiac symptoms dominant. Palpitation, precordial pain and vertigo are more pronounced than actual fatigue, while the dyspnea is more subjective than objective. In the presence of slight enlargement of the thyroid, which sometimes occurs, differentiation of this type from that of true hyperthyroidism at times is difficult. In this connection it must be emphasized that slight enlargement of the thyroid, plus tremors of the hands and an easily excitable heart, do not constitute a syndrome on which to base a diagnosis of hyperthyroidism. The large majority of patients admitted to the hospital with this diagnosis have been found to have a normal

1. The strength was estimated by the Martin spring balance test. Strength to weight normal values were obtained on 100 soldiers who had had over a year of hard training. The average S/W value for these men was 24.5.

basal metabolism. Hyperthyroidism to the extent of causing cardiac disturbance and nervous unrest, which at the same time fails to increase oxidation, is of a type that must be explained on purely hypothetic grounds.

A careful history of these patients of the neurotic type shows that the cardiac disorder dates back to early childhood, while the thyroid enlargement in cases of true exophthalmic goiter can be proved clearly to have been of recent development. In a few of our patients the history pointed to a definite exophthalmic goiter, which developed since childhood and which had apparently left a residuum of thyroid enlargement and exophthalmos. In the presence of a normal basal metabolism it was necessary to interpret the cardiac symptoms either as a sequel of the active exophthalmic goiter, or as a concomitant defect of the nature of that which forms the basis for all of these functional cases.

Whatever the explanation, these patients of the neurotic type are not suffering from hypersecretion of the thyroid gland, so far as can be determined with present-day facilities. They deserve compensation only when their ambition has led them to disregard symptoms in the attempt to carry on, with consequent damage to structures — cardiovascular, nervous, or whatever they be — which are fundamentally unfit for such a strain.

4. CARDIAC DISORDER FUNCTIONAL, POSTINFECTIOUS

Individuals of this type date the onset of their cardiac symptoms very definitely to an attack of one of the acute infections which are known to affect the myocardium at times, such as pneumonia, influenza, meningitis, diphtheria, and streptococcus infections. In the patient seen during the acute illness, definite evidence of myocardial involvement sometimes can be demonstrated, if we can accept such findings as an enlarged area of dulness with alteration in force and rhythm, and the definite murmur of mitral insufficiency. After a few weeks these may disappear entirely to be succeeded by the negative picture of functional cardiac disorder. Seen first at this stage, a diagnosis of myocarditis cannot be made with positiveness. However, the majority probably are essentially of the functional type throughout. If such patients can be followed for a sufficient period, it is again possible that a certain proportion will develop evidence of a true myocarditis; but failure to find it six months after infection would warrant the belief that the symptoms of cardiac disturbance were dependent on other factors than irremediable myocardial degeneration. In a few doubtful cases the electrocardiograph has enabled us to differentiate true myocarditis, which would have been difficult to determine on purely clinical evidence.

In the majority of these patients the physical findings are the same as in the other groups. Subjectively the dyspnea on exertion is the most prominent symptom, while precordial pain and vertigo are less frequent. The latter facts are in noteworthy contradistinction to the findings in myocarditis on the one hand, in which precordial pain is quite common, and to the neurotic or constitutionally or physically inferior types on the other hand, in which both precordial pain and vertigo are frequently encountered.

The determination of the line of duty of such disabilities offers no difficulties when they follow acute infections occurring while on duty. Much more difficult is the determination of the disability. Full consideration should be given to the individual who followed an active pursuit prior to enlistment and who carried on well during his military service until he contracted the infectious disease. He should be warned of the dangers of physical idleness on the one hand, and of over activity on the other. Under the worst of circumstances probably only a few will fail to revert to their former physical status, so that the compensation may safely be assumed to be "temporary."

How long to continue the physical training of these patients often is not easily determined. If proper facilities are available under suitable environment, and nostalgia from prolonged stay in hospitals is not a factor, many of them can be completely cured in from six to twelve weeks. For some, a "therapeutic furlough" restores morale and enables them to undertake the cure in an adaptable frame of mind. In not a few of these postinfectious cases, the history of events before enlistment and the presence of certain characteristics found in the group of the "constitutionally inferior" or in the type of the "defective physically" show that they were substandard even before the acquired infection. For such patients disability need not be large if their previous occupation has been light or sedentary, since their physical handicap will not weigh heavily on their wage-earning capacity. The more closely they approach the constitutionally or physically defective type, however, the less the chance for improvement from the exercises.

5. CARDIAC DISORDER FUNCTIONAL, POSTRHEUMATIC

This special classification was made before the signing of the armistice, in the belief that no patient whose cardiac symptoms dated from an attack of rheumatic fever could safely be permitted to return to full military duty, no matter how slight the evidence of myocardial damage, as well as on account of the tendency to recurrence under conditions of active campaign. All the cases in this group were studied with especial care to determine valvular and myocardial lesions. In a large proportion, no more evidence of definite pathologic changes could be found than in the preceding four groups, so that we were forced to place them under the class of functional disturbances, although it is reasonably certain that some will develop later definite myocardial lesions. For this reason, their compensation should be more liberal for any active vocation, and the possible contingencies anticipated with the statement, "future problematical."

HYPERTHYROIDISM

We have had a comparatively small number of cases of true hyperthyroidism with persistent tachycardia, nervous unrest, turgescence and enlargement of the thyroid gland, marked tremors, more or less exophthalmos, and, above all, increased basal metabolism. Since treatment of true exophthalmic goiter, apart from surgical interference, primarily consists of complete physical and mental rest, while the worst thing that can be done for a victim of functional cardiac disorder (as Lewis points out) is to be put to bed, the differentiation of the two diseases is of vital importance from a therapeutic standpoint. This subject has been considered in an article by Major Peabody, which is in process of publication and need not be considered here. The disability resulting from true exophthalmic goiter should be absolute with the pros-

pect, naturally, that full compensation will not be needed indefinitely.

MIXED TYPES

Not a few cases have been of a mixed type, when constitutional inferiority, defective physical development, and neurotic characteristics have all figured prominently in the patient's antecedents. These cases offer diagnostic difficulties; but disability and compensation are decided on the basis of the kind and amount of military duty performed, rather than on an academic accuracy of differentiation. We have had very little experience with the disturbance of cardiac action that follows exposure to gas, although the history at times showed a clear-cut etiologic relationship. A separate study of gassed patients has been instituted.

ORGANIC HEART DISEASE

The description of these cases needs no special consideration. As usual, it is found that acute rheumatic fever, both before and after enlistment, figures largely as an etiologic factor. Several instances illustrated the perfectly well recognized, but not yet sufficiently known fact that the valvular lesion itself plays a negligible rôle in producing symptoms, so long as the myocardium is competent. The iron-worker or stevedore with valvular disease may accomplish his heavy day's work for years in absolute ignorance of his impending disability. One noteworthy case gave a history of a severe attack of rheumatic fever two years before enlistment. Subsequent to this he worked as a boiler-maker without any apparent cardiac embarrassment. Two months after enlistment, having been examined and accepted in Class A, he experienced an attack of suffocation with some blood spitting while on a march with full equipment from Brest to his regimental billets. At the time he was suffering from a "cold," but otherwise he had been perfectly well since enlistment. After a day's rest he recovered, but seven days later while at drill he had another and larger hemorrhage and was finally invalided home. We found a typical mitral stenosis, which, it is reasonably certain, had originated in the attack of rheumatism some two and a half years previously.

In the preparation of his certificate for discharge, the disability was put "not in line of duty," for the obvious reason that the length and type of service had been too short to produce such disability in any but a potentially ill man. The reviewing authority requested that this decision be reconsidered on the basis of the wording of General Order 47, War Department, which provides that any determined disability which occurs subsequent to a soldier's enlistment, after he has been examined and passed, shall be considered in line of duty, unless it can be shown unmistakably that the disability existed prior to military duty. The use of the word "disability" instead of "disease" offers ample opportunity to compensate a soldier who has been rendered hors de combat by cardiac disease.

The actual and relative number of instances of aortic regurgitation in overseas patients has been surprisingly large. Two explanations for this can be offered: first, that mitral murmurs are less easily overlooked, and consequently that their possessors are rejected, and second, that the stress of intensive training and the even greater stress of actual conditions of battle have aggravated lesions that were in their incipiency at the time the soldiers enlisted. In the absence of the concomitant signs usually found in this disease, the interpretation of a definite diastolic murmur at the left sternal border is open to some question, but can hardly be decided on any basis other than that of aortic insufficiency. Apparently this soft diastolic murmur is very frequently missed. The question has arisen as to the possibility of cardiorespiratory murmurs occurring during diastole when the patient checks his respiratory movements at the end of expiration. In one instaance of functional cardiac disorder in a thin-chested individual, a systolic cardiorespiratory murmur could be heard at the apex during respiration, but disappeared on the patient's holding his breath. In the same individual a distinct diastolic murmur was heard over the sternum at the end of both inspiration and expiration. This was atypical in time and quality and variable in intensity, however, and was undoubtedly produced by exocardial factors.

We have encountered two instances of congenital heart disease:

The first, patulous ductus arteriosus, occurred in an officer whose first cardiac symptoms of which he had any recollection occurred at the age of 8, consisting of pain around the heart felt chiefly on deep inspiration. At school he was unable to play games vigorously without dyspnea and the precordial pain, but the disability was so slight as not to interfere with his work later as a laboratory worker and veterinary surgeon. In July, 1917, he was examined and passed for military service; did full duty in this country in the veterinary corps; was sent overseas in March, 1918, and continued to do full duty until September 15, when under fire and the coincident excitement he developed an extreme cardiac palpitation, dyspnea and nervousness, for which he was invalided home. When he entered this hospital, November 8, he was feeling perfectly well when quiet, but complained of some dyspnea and palpitation on exertion. Examination of the heart showed the point of maximum intensity in the fifth interspace 9.5 cm.; left border, 10 cm. in the fifth interspace; right border, 3 cm. in the fourth interspace from the midsternal line. There was an almost continuous "humming-top" murmur, loudest during systole, heard best in the third left interspace, transmitted for some distance to the left and upward. The pulmonary second sound was accentuated in the recumbent position, and a soft systolic murmur was heard at the apex. There was practically no cyanosis except after exercise. After nearly two months of rest the condition of this patient is apparently the same as before he entered the Army.

The second patient was an enlisted man who claimed that he had never suffered any disability and had worked in an iron foundry for eight months before enlistment. In June, 1918, two months after induction, he developed his first symptoms—dyspnea, cough and weakness—while on a hike from the port of debarkation to his rest billets. On admission to this hospital in October, the area of cardiac dulness was not enlarged; there was slight accentuation of the second pulmonic sound and a rasping systolic murmur, loudest at the third left interspace close to the sternum, diminishing to a rather faint murmur at the apex and transmitted well to the left along the third and fourth ribs. There was no cyanosis nor any history of it. A diagnosis of defective interventricular septum, small lesion, seemed the most probable. The disability was rated with that of mitral regurgitation.

In spite of all that has been written, the fact still needs emphasis that most systolic murmurs at or near the apex are of functional, rather than organic, origin. In spite of many exceptions, the organic murmur is loudest at or near the apex, is constant, and is increased by exercise; and the functional murmur is apt to be as loud or louder at the base and is exaggerated in the supine position. To exclude cardiorespiratory murmurs, auscultation should always be

done with the patient holding his breath midway between expiration and inspiration. Enlargement of the heart, making due allowance for the size of the individual and the shape of the heart and the chest, points to the organic lesion. Marked accentuation of the second pulmonic sound and transmission to the left axilla are significant but by no means infallible criteria. A few cases will almost elude analysis. In these, the previous occurrence of rheumatic fever often will turn the scale in favor of the diagnosis of an organic lesion. In general, also, we have observed that the acceleration of the heart's action, both at rest and after exercise, is less in the case with the true organic lesion than in the functional disorder.

The typical presystolic murmur of mitral stenosis would rarely be missed if the heart were auscultęd with the patient lying down. This is of sufficient importance to warrant the use of examining tables. The only disadvantage would be the misinterpretation of the accentuation of the functional systolic murmur in the supine position. The differentiation of the Flint murmur with aortic regurgitation from that of a coincident mitral stenosis usually can be made on the crescendo character ending in the snapping first sound. At times, however, the distinction is difficult to make. The stenotic murmur usually is sharply localized at or just to the right of the point of maximum intensity. The Flint murmur has a wider distribution, at times extending even to the left border of the sternum. Both the aortic regurgitant and the Flint murmurs are heard better, as a rule, in the erect than in the supine position, while the murmur of mitral stenosis is affected in the reverse order. Definite enlargement at the base of the heart would be prima facie evidence of stenosis. Unfortunately, this is difficult to determine with accuracy, and even the orthodiagraphic plates are misleading in many instances. When all physical findings are inconclusive, the probability may be assumed that a double lesion would produce more disability than simple aortic insufficiency, unless the valvular lesions were of recent origin.

Pericardial lesions have been recognized in only a few cases. In one case which resulted from a high explosive shell wound with a definite history of a suppurative lesion, the only residual signs were a short and sharp first sound without murmurs, and a definite fixation of the heart on change of position. Another case had been diagnosed on the presence of well marked enlargement and Broadbent's sign. Mitral insufficiency was also evident, but was thought to be due to old valvulitis. This patient was killed in an automobile accident, and the diagnosis of pericarditis was confirmed at necropsy. The mitral leaflets were absolutely normal, however, and the insufficiency was purely relative.

In the majority of the cases we have seen, the valvular disease undoubtedly existed at the time of enlistment, and was overlooked by the examining surgeon. The disability which succeeded after several months of military duty therefore was considered to be in line of duty. In determining the degree of disability with a view to compensation, there should be due consideration for the expectancy of life and ability to continue in a wage-earning capacity, as well as for the type of work of which the soldier is capable. It is believed to be the intention of the Federal Board for Vocational Education to compel the soldier to take advantage of opportunities for learning a new trade, by refusing compensation for total disability in the case of a soldier who is physically able to carry on a lighter occupation after instruction, but is unwilling to take the instruction. Until the machinery for this is in good working order, it is manifestly unfair to the soldier to penalize him by compelling him to continue a laborous pursuit because compensation is not sufficient to enable him to live without it, so that disability should cover these needs, until provision can be made for vocational reeducation.

OCCUPATION

We have emphasized the importance of the history in determining the types of functional cardiac disease, and one of the most important items in the history is the previous occupation. In the series so far reviewed, over 60 per cent. of those with functional cardiac disease have earned their living in prewar days in light or sheltered occupations. Of the organic cases, over 80 per cent. have selected active economic pursuits, in spite of the more or less damaged condition of their hearts. As Major Peabody has elsewhere pointed out, those with functional cardiac disease always take particular care not to injure themselves by hard manual labor. The much more unfortunate victim of organic heart disease does not hesitate to take chances, in spite of great limitation of his cardiac reserve.

EXERCISE

We must emphasize the fact that our studies have demonstrated beyond reasonable doubt that the individual suffering from functional cardiac disorder of any type does better on exercise than on rest; that the exercise must be graduated from the smallest possible beginning, and that these patients require constant encouragement to overcome their natural aversion to, and fear of, the symptoms produced by exertion. These symptoms have resulted in their leading inactive lives until the vicious cycle has been definitely established. The cycle cannot be broken successfully by revolutionary methods. As has been stated, many of them fail to respond to any discoverable incentive. A few react to the gospel of muscular development, and it is an interesting speculation as to how many might have been saved a lifelong disability had the gospel been rightly preached at the impressionable age. The neurotic type is too self-centered and neurasthenic to be reached in ordinary class work. The approach to this individual must be psychiatric as well as physical. The postinfectious type offers the greatest possibilities for real cure, with the proviso that especial care must be exercised to avoid overstrain. True myocardial lesions in the light of our present knowledge demand rest until all definite signs have disappeared. Finally, it must be noted that graduated exercise offers a much better cardiac tonic for cases with valvular defects than years of clinical teaching have led us to believe. It cannot be too strongly insisted, however, that the fool rushing in where angels (of the past) feared to tread may work incalculable damage. Caution and skilled knowledge are prerequisities of successful treatment.

Tuberculosis.—Tuberculosis is the great scourge of civilized mankind. Unless more progress is made in fighting the disease, 9,000,000 of the 100,000,000 persons in the United States may be expected to die of it.—*Health Bulletin*, Newark, N. J.

BACTERIAL PROTEIN INJECTIONS IN INFLUENZAL PNEUMONIA *

DUDLEY ROBERTS, M.D. (BROOKLYN)
Major, M. C., U. S. Army; Chief of Medical Service
AND
EDWARD G. CARY, M.D. (NEW YORK)
Major, M. C., U. S. Army; Chief of Laboratory Service
WILLIAMSBRIDGE, N. Y.

During the early days of the recent pandemic of acute respiratory disease, it became evident that we were dealing with a new and exceedingly fatal malady. In many cases it was obvious from the first onset that the peculiar widespread pulmonary pathologic condition was already established and that death was certain. In other cases we helplessly watched the sudden or gradual change from a mild type of the disease and from a limited pathologic process to the virulent form with the usual outcome. All therapeutic efforts seemed futile, the condition of our vigorous young patients changing for better or worse in the most puzzling manner. Desultory attempts were made to save life by phlebotomy and hypodermoclysis or by drugs supposed to effect a proper balance in the pulmonary circulation. Patients were accurately digitalized, but, while the heart action remained excellent, the end was only postponed. Transfusion of blood from recovered patients was tried in a few instances with unsatisfactory results. However, only the worst type of case was selected, and our experience with the procedure in lobar pneumonia strongly suggests that in a series of cases the results might be excellent. Hypodermic administration of mixed influenza, pneumococcus and streptococcus vaccines was tried in a well-controlled series of influenza cases as soon as possible after admission. The percentage of pneumonia and the mortality in this series was no lower than in the series of cases alternately admitted and used as controls. The results might have been different had a dosage been used sufficient to excite the phenomena that followed the intravenous injection of the same preparation.

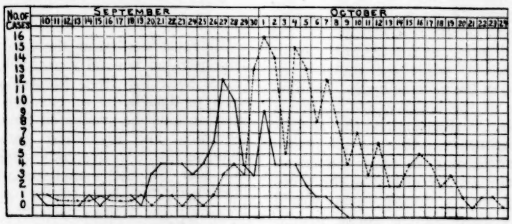


Chart 1.—Incidence of onset of pneumonia: solid line, Series 1; broken line, Series 2.

October 3, we began the use of intravenous injections of mixed influenza vaccines in a consecutive series of cases, varying slightly the dosage and the mode of procedure as experience accumulated. Chart 1 shows the incidence of the onset of the disease in the two series from the beginning of the epidemic to the conclusion of this study. Each series of cases is entirely made up of definitely established pneumonias. Patients were admitted either directly from the receiving ward with pneumonia already developed, or were held in the influenza wards until consolidation was definitely established. No cases were excluded from either series because of the hopeless condition in which the patient was when admitted, some in each series dying in a few hours.

It was at first thought that by the use of these mixed vaccines a specific immunity might be quickly established against what we believed were the secondary invaders, namely, the pneumococci and streptococci. We soon found that in spite of the establishment of massive consolidation, good results were obtained when there was a definite reaction following the injection, and we came to believe that we were largely dependent for results on a "nonspecific protein" reaction. We felt, however, that the use of a vaccine made from the prevalent organisms was advisable for many reasons, and no observations were made with other forms of protein.

THE VACCINE OR BACTERIAL PROTEIN

A saline suspension of heat-killed organisms was used, so that each cubic centimeter contained 100 million influenza bacilli; 100 million pneumococci, Types I, II and III; 100 million streptococci and 100 million staphylococci. So far as exciting an active immunity is concerned, it is apparent on studying the bacteriology of the disease, as seen in the accompanying table, that streptococci and pneumococcus Type IV were frequently present, and the vaccine was probably not sufficiently polyvalent because of our inadequate knowledge of these strains. At the outset we used 0.5 c.c. as the initial dose, and doubled the dose daily until four doses had been given. Later we used 1 c.c. as an initial dose and regulated the succeeding doses by the amount of reaction. We were anxious to secure a sharp reaction, and the dose was increased or held the same according to the character of the reaction secured.

THE REACTION

The characteristic reaction following injections is seen in Charts 2 and 3. About one-half hour after the injection there is a chill or chilly feeling accompanied by a definite rise in pulse rate. In from one-half to two hours later there is a rise of temperature of from 1 to 3 degrees depending on the previous level. The elevation of temperature is always of short duration and is easily overlooked unless the temperature is taken at least every half hour. The fall of temperature may be only slight, but at best it is a crisis, reaching practically normal. Elevation in a few hours may occur after several falls until finally the temperature continues normal. During the chill the patient is not particularly uncomfortable, and when it is over and the temperature falls there is a definite improvement in the state of well-being. From our experience with over 200 cases treated by protein injections, it may be positively stated that there are no untoward results whatsoever. The severely ill are never made worse.

While it is true that the results are unsatisfactory if a reaction does not follow the injection, and that

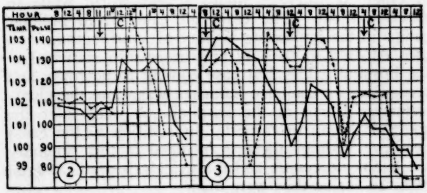
* From the United States Army General Hospital No. 1 (Columbia War Hospital).

the results are usually satisfactory if there is a sharp reaction, these rules are not without exceptions.

Charts 4, 5 and 6 give daily reports of the course of the temperature before and after the injections in some particularly severe cases. Under expectant plans of treatment, judging from bedside observation and the extent of the pathologic process as shown by roentgenograms, cases such as these always ended fatally. By this form of chart the true relation between injection and temperature rise and fall is not explicitly conveyed.

RELATIVE MORTALITY

In Series 1, with expectant treatment, out of a total of eighty-six cases there were twenty-seven deaths, a mortality of 31.2 per cent. In Series 2, treated with protein injections, out of a total of 200 cases, there were nineteen deaths, a mortality of 9.5 per cent. The question arises at once as to whether the lowered mortality in Series 2 was due to the fact that it was later in the epidemic. In Chart 1 is shown the incidence of the onset of the cases in each series. It is shown that while the two series were not parallel, they overlapped to a certain extent. Taking the period up to and not including October 5, there is sufficient overlapping to permit of a fair comparison. In Series 1, eighty-three cases had their onset with a mortality of 31 per cent.,



Charts 2 and 3.—Effect of protein injection on pulse and temperature: solid line, pulse; broken line, temperature; arrows indicate protein injections; C, chill. In Chart 2 the records were made at frequent intervals; in Chart 3 there was failure to catch the maximum rise owing to taking the temperature only every four hours.

and in Series 2 sixty-seven cases must be included, with a mortality of 11.3 per cent. This is graphically demonstrated by Chart 7. The mortality after October 5 was slightly lower, but this may perhaps be accounted for by improvements in the technic of administration. There appear to be no reasons for believing that there was a difference in the virulence of the cases included in the two series, although later on, during November and December, the virulence seemed to be somewhat lessened.

RESULTS OF SPUTUM EXAMINATION IN INFLUENZAL PNEUMONIA

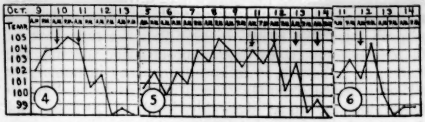
Number Examined	Influenza on Smear	Influenza on Culture	Pneumococcus Types I	II	III	IV	Hemolytic Streptococcus	Streptococcus Viridans	Indefinite Streptococcus
First series... 86	26	9	0	5	4	19	10	1	8
Second series 59	28	16	0	0	2	37	11	0	26
Totals..... 95	54	25	0	5	6	56	21	1	34
Percentage.....	56%	25%	0	5	5	60%	22%	1%	36%

RECOVERY BY CRISIS

Usually the temperature returned to normal by lysis. In the first series, crisis occurred in 20 per cent. of the cases, while in the second series the temperature came to normal by crisis in 36 per cent.

COMPARISON OF DURATION OF THE DISEASE

In Chart 8 is shown the percentage of cases reaching normal temperatures on the various days after admission to the hospital. Had the injections not been withheld until the diagnosis was definitely established,



Charts 4, 5 and 6.—Course of temperature before and after injections in particularly severe cases: arrows indicate protein injections.

the differences might have been even more striking. As it is, there can be no question that convalescence, as judged by the return of temperature to normal, came earlier in the protein injection series.

EFFECT ON THE LEUKOCYTE COUNT

The press of work precluded elaborate studies of the leukocytes before and after injections, but in a table prepared but not given here, the results in nine cases are shown. The rise was transitory, varied in its maximum, and was not always caught if, indeed, it was present. The increase was polymorphonuclear, and at no time was an eosinophil increase observed.

THE STATUS OF NONSPECIFIC PROTEIN THERAPY

The idea of using injections of bacteria and foreign proteins in the treatment of disease was forced on our attention largely by the excellent results reported from the use of typhoid vaccines intravenously in the treatment of typhoid fever and by the fact that later equally good results followed injections of other organisms. Since then a variety of proteins have been used and suggested, but the chief use has been made of the idea in the treatment of arthritis by typhoid vaccines. Apparently something happens as a result of the reaction following protein injections. Gay and Claypole, and others since, have called attention to the rise in the leukocyte count incident to the reaction. Various investigators have seemed to prove that there is a higher agglutinin and lysin production in animals subjected to high temperatures. Others have shown that the opsonin and lysin content of human and animal serum is definitely raised after the therapeutic injection of foreign protein. We have ourselves observed the most striking results in the prompt recovery of patients following the use of therapeutic serums when the amount given was so small that a passive immunity was out of consideration. Herrmann[1] in a recent summary of the subject concludes that "the intravenous

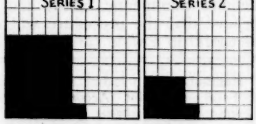


Chart 7.—Mortality (indicated by solid black): In Series 1 there were eighty-three cases with onset to October 5, and the mortality was 31.2 per cent.; in Series 2 there were sixty-seven cases with onset to October 5, and the mortality was 11 per cent.

1. Herrmann, S. F.: Liberation of Antibodies on Injection of Foreign Proteins, J. Infect. Dis. 23: 457 (Nov.) 1918.

injection of foreign protein serves as a stimulus for the liberation of specific antibodies in animals in which the previously injected antigen was unable to cause such a liberation." In other words, while the therapeutic injection is nonspecific, the antibody response is specific.

The invasion of pathogenic micro-organisms excites certain symptoms or phenomena that are intimately associated with the development of immunity. Experience, at the present time, with the reaction following protein injections tends to show that the repetition of these phenomena, or their accentuation during the course of a disease, is followed, in many instances, by striking clinical results. Much remains to be done to determine the most desirable kind of protein and dosage. Aside from the dangers attending intravenous medication, it may again be emphasized that the procedure is harmless. Bacterial vaccines are always available in safe and convenient form, and a protein reaction may be secured by subcutaneous or intramuscular injection if a dose several times as large as the ordinary is used. Bacterial vaccines commend themselves because there is no danger of anaphylactic sensitization as is the case with many foreign proteins. Sterile milk is an admirable form of protein for intramuscular injection, but there is always a possibility of sensitization.

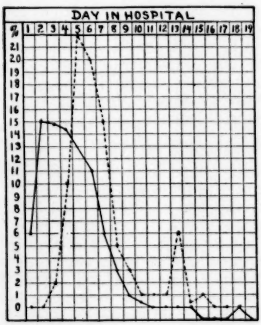


Chart 8.—Percentage of cases reaching normal temperature on days after admission to the hospital: broken line, Series 1; solid line, Series 2.

In studying and recommending any new therapeutic procedure, the greatest caution should be observed. We have endeavored critically to analyze our results and see to what other factors the shortening of the disease and the lessened mortality in our series of cases might be due. We have been forced to conclude that, in the malady under consideration, protein injections have a very definite therapeutic value, and we are inclined to believe that the procedure will come to be accepted as useful in a wide variety of infectious diseases.

Menthol.—Japan is one of the greatest producers of menthol and peppermint. According to Consul-General George H. Scidmore at Yokahama (*Commerce Reports*, February 28), the crop during the past year has been poor, the acreage of mint having been reduced by about 50 per cent. on account of the low prices prevailing in 1917. In 1916 the trade reached its height, most of the product coming to the United States instead of to Germany as before the war. Owing to conditions of shipping and other factors connected with the trade, the price began declining in 1917, and though the export in that year amounted to 332,275 pounds, valued at $793,975, the total for 1918 to the end of September amounted to $35,183 less than for the same period of 1917. The price had been steadily decreasing until the end of the war, when prices began going up; and at the time of this report had reached $7.73 per kin of 1.32 pounds, almost twice the lowest price reached in 1918. In the early part of 1918 the crystals were quoted as low as $2.50 and the oil at 90 cents per kin.

GROSS PATHOLOGY OF EPIDEMIC INFLUENZA AT WALTER REED GENERAL HOSPITAL

M. W. LYON, Jr., M.D.
Captain, M. C., U. S. Army
WASHINGTON, D. C.

In this paper is given a brief account of the gross pathologic changes seen in fifty-six necropsies of cases of epidemic influenza between Sept. 18 and Nov. 17, 1918, at the Walter Reed General Hospital. Within the next month only four other cases of influenza were examined at necropsy. These differ in no essential manner from the fifty-six cases of this summary, except that one became a Type I pneumococcus septicemia, pneumonia and double empyema, and resulted fatally sixty-four days after the onset of the original attack of influenza. Another developed a massive bilateral serofibrinopurulent pleural effusion and a fibrinopurulent pericarditis. I performed practically all of the necropsies. In a few I acted as an assistant. The account is based on an examination of the protocols of the necropsies rather than on general impressions as to the findings. There is no essential novelty in the findings, but as some of the gross changes differ slightly in kind and frequency from those seen in other localities, it would appear worth while to describe them. The cases all came from military camps in the immediate vicinity of Washington, from men on duty in the city proper, or men stationed at the hospital. The first case coming to necropsy and recognized as epidemic influenza was from the Quartermaster Corps at the hospital. A week later the epidemic began in earnest. In addition to the gross necropsy findings there is included in this summary the leukocyte counts and the urinalysis of these fatal cases so far as they were made.

Part of the bacteriologic findings in this series of cases have already been reported on by Nichols and Stimmel.[1] When they seem of particular interest in these notes, the bacteriologic results are given. The bacteriologic studies were all made by these two authors. Bacteriologic examinations have yielded a variety of organisms from the lungs, pleural fluids, etc., among them pneumococcus, all groups but II, most frequently, Friedländer bacillus, influenza bacillus, hemolytic streptococci and staphylococci. No one form was found constantly present. Among many blood cultures, mainly antemortem, influenza bacilli were never recovered. The only locations in which this organism occurred were the lungs, bronchi or trachea, and the organism was obtained either antimortem or postmortem. It was isolated comparatively infrequently in this series of necropsies, and was never found to the exclusion of other bacteria, although late in the epidemic it was obtained rather consistently by lung puncture from patients.

DAY OF DEATH AFTER ONSET

The average duration of life from the date of onset was 12.4 days. The shortest illness was 3 days and the longest 35 days in a case of pneumococcus empyema. The average day of death in September with seven cases was 8.5 days; during the first half of October

1. Nichols, H. J., and Stimmel, C. O.: Pneumobacilli as Complicating Organisms in Influenzal Pneumonia, J. A. M. A. 72: 174 (Jan. 18) 1919.

with twenty-four cases, 10.3 days; during the last half of the month with seventeen cases, 13 days; and during November with four cases, 17.7 days. The increasing length of life after onset in the later cases is probably due not so much to greater virulence of the virus in the earlier cases as to the fact that those not succumbing in the early onrush lived to die of secondary invaders.

APPEARANCE OF BODY AFTER DEATH

The appearance of the body was in most cases characterized by a cyanotic condition of the neck, the ears, and the adjacent portion of the face and the shoulders. Equally conspicuous was a brownish or reddish brown fluid about the nostrils and the mouth. Often when the body was turned on its side, a large quantity of this reddish brown fluid, often frothy, drained from the nose and mouth. Of the fifty-six necropsies, only eight are recorded as not showing these conditions. In six cases, universal icterus of greater or less degree was present. Most of the necropsies were done on individuals who appeared to be between 20 and 30 years of age; about five appeared to be between 30 and 40. As the army is composed of young men, this excess of young adults is not surprising. Of the fifty-six cases, thirteen are referred to as of slender or less than average build, all the others being well built; but this proportion is probably no greater than the normal ratio of slenderly built and well built men in the service.

LEUKOCYTE COUNT

The average number of leukocytes per cubic millimeter in this series of fatal cases was 5,537, with extremes of 2,675 and 11,900. Nineteen were less than 5,000; seventeen between 5,001 and 7,500; four between 7,501 and 10,000, and three over 10,000. These figures include only the low counts, and disregard a number of high counts occurring at a period later in the disease when secondary infections were evidently in sway, such as 11,300 at twenty-one days; 12,600 at thirteen days; 15,450 at twenty-one days; 16,630 at thirty-five days; 22,100 at twenty days, and 30,300 at seventeen days.

CHANGES IN THE LUNGS AND ACCESSORY STRUCTURES

Hemorrhagic Pneumonitis.—This term is used to designate one of the characteristic lesions of the disease, and seen in all the cases. It was marked by intense congestion of the lung tissue and an abundance of serous fluid loaded with red cells in the alveoli. It was present in all lobes, and nearly always most conspicuous in the lower lobes and toward the mediastinal sides. In no instance did the process involve completely any entire lobe. Close examination revealed, in every case, air-containing areas. In the lower lobes, which were most involved and often appeared nearly solid, there were nearly always found along the anterior border of the lobe and even along the lower borders air-containing portions, usually emphysematous. These borders often appeared as a distinct air-containing edge. At other times they contained air-containing lobules, single or in groups. Sometimes in the midst of an almost solid portion of a lobe were found single air-containing lobules. The edges of the hemorrhagic areas in air-containing portions and of air-containing areas in the hemorrhagic portions were nearly always sharply defined. In three instances the hemorrhagic pneumonitis was essentially confined to one side, the left. In two instances the process was more pronounced in the upper lobes than in the lower. In no instance was the right lung involved when the left was not. In probably about half the cases the upper lobes were almost as extensively involved as the lower lobes, and their air-containing portions were emphysematous. Apparently the only reason why the entire five lobes of both lungs were not uniformly involved was that death necessarily occurred from lack of air before so complete an involvement could take place. It was surprising to see how extensive the lung involvement was and realize that only a few hours previously the condition must have been nearly the same while the patient was still living. On the other hand, there were cases in which the hemorrhagic pneumonitis was not extensive enough by itself to have caused death. The lobe least frequently involved was the right middle. In eight cases it was essentially uninvolved, of the fifty-three cases in which the right lung was attacked.

The distribution in the lungs of the hemorrhagic pneumonitis was very similar to the congested areas in the lungs seen so frequently in death from various causes. One cannot escape the conclusion that the hemorrhagic pneumonitis was in some manner connected with posture and the so-called hypostatic congestion of the lungs; but that this is not entirely so is shown by those cases, comparatively few, however, in which the hemorrhagic process was more pronounced in the upper lobes than in the lower.

Pneumonic Processes.—A more or less distinct consolidation was usually present somewhere in the lungs, although in eleven instances (20 per cent.) no real pneumonic process was observable, the only lung lesion being the hemorrhagic pneumonitis. The average day of death in these eleven cases was 7.7, with extremes of 3 and 16 days. The pneumonic process as here understood consisted of larger or smaller areas of distinct consolidation, varying in color, being light gray, brownish gray, or dark reddish brown. When the more grayish portions were scraped, considerable purulent material was usually seen. In thirty-five of the cases the consolidated portion was of small size and might be termed a lobular pneumonia. This lobular process occurred no more frequently on one side than on the other. Most often it was found in all the lobes, but was most pronounced in the lower lobes. In a few cases the lower lobes were the only ones involved. In sixteen cases the pneumonic process was extensive enough to be of a lobar type of consolidation. These lobar types of consolidation did not appear to be typical of lobar pneumonia as a primary disease. In no case was an entire lobe uniformly solid, but in many instances fully three fourths or two thirds of a lobe was involved. Nine of these lobar types were associated with a lobular type of pneumonia elsewhere in the lungs. Usually the lobar type appeared to be a confluent lobular pneumonia rather than a true lobar type of pneumonia. It occurred six times on the left side alone, and four times on the right side alone. In the six remaining cases this lobar process involved both lungs. While usually more frequently found in the lower lobes, the lobar type of pneumonia was occasionally seen in an upper lobe, when the lower lobe was not involved.

Other Lung Conditions.—In the instance in which a streptococcus empyema developed, the right lung is described as having tissue around the bronchi appar-

ently infiltrated and of a light color—interstitial bronchopneumonia. Cultures from this lung yielded *Streptococcus hemolyticus* and Friedländer's bacillus. The same organisms were found in other lungs not showing this condition.

In one necropsy with lobar pneumonia in the right upper lobe and lobular pneumonia elsewhere in the lungs, pressure on the lung substance at various places expressed a small drop of thick, creamy pus from the cut bronchioles. This was the only instance in which this condition was seen, although there were five cases in which purulent material was found in the larger bronchi.

In one instance, cross-section of a portion of lung with marked hemorrhagic pneumonitis, the structure was slightly honeycombed with small bubbles resembling somewhat the liver in experimental gas bacillus infections in animals.

Emphysema of most of or at least some part of the air-containing portions of the lungs was always present. Sometimes the distention of the air vesicles was very marked. Interstitial emphysema was very rare. In three instances there were small bubbles of air or gas in the mediastinal tissue, a condition sometimes seen in any necropsy, and apparently in no wise associated with influenza. In two instances there was an apparent escape of air beneath the pleura, raising it up in a few places. By direct pressure these "bubbles" beneath the pleura could be pushed from one part of the lung surface to another. In a number of cases there appeared to be air-containing lines in or beneath the pleura, more or less roughly outlining the lung lobules. These were interpreted as small, once distended but now empty vessels. Aside from these few scarcely noticeable instances of interstitial emphysema, such a condition was not seen. Extensive accumulations of gas beneath the tissues anywhere, such as has been reported by some observers in other localities, was not seen.

No lung abscesses were found. In many cases, had the patient lived, abscesses would have in all probability formed; but in only one instance was there any indication of a distinct softening of any of the consolidated portions of the lungs, and that particular area was solitary and of small size.

Weight of Lungs.—The lungs were usually much increased in weight, owing to pneumonic and hemorrhagic processes or both. The average weight of both lungs together, including a few millimeters of trachea, was 1,953 gm., with extremes of 775 and 3,290 gm. In case each lung was removed separately, a portion of the trachea was always left attached to one. The unusually light pair of lungs came from a very slightly built individual who had a marked lateral curvature of the spine and an unusually small thoracic cavity, and in whom only the left lower lobe was extensively involved in the hemorrhagic pneumonitis. In the case of the pair with the maximum weight, the right lung was very much enlarged and almost uniformly solid; its weight by itself was 2,740 gm. In about half the necropsies, the lungs were removed attached to each other and used as museum objects. In the half in which they were removed and weighed separately, the average weight of the left lung was 870 gm. with extremes of 550 and 1,320 gm. The minimum occurred in the left lung of the pair that weighed the most. The maximum weight of left lung occurred in one having a distinct lobular pneumonic process in addition to the hemorrhagic pneumonitis. The average weight of the right lung was 1,118 gm., with extremes of 650 and 1,560 gm. The lightest right lung occurred in the first case of influenza coming to necropsy, and showed a hemorrhagic process in the upper and lower lobes but not in the middle. The lung was not weighed until after it had been sectioned and lost much blood. The heaviest right lung showed large areas of lobular consolidation and an extensive hemorrhagic process involving all the lobes. The pair of lungs in this instance was the second heaviest pair, being 2,980 gm. in weight. After these two lungs had been cut apart and each was weighed separately, the combined weight of both lungs was then only 2,880 gm., 100 gm. of red, frothy fluid having dripped from the bronchi and trachea. This loss of weight by draining of fluid from the lungs after they were cut apart or sectioned was always considerable, but it was recorded in only a few instances. In one case as much as 400 gm. were lost.

Trachea and Larger Bronchi.—On cutting across the trachea or the main bronchi in essentially all cases, a large amount of reddish or pinkish frothy fluid dripped out; in some cases the fluid was so abundant that the trachea resembled a large blood vessel when cut across. In five cases the fluid dripping from the trachea or bronchi was purulent, and in one case it was mucopurulent. The mucous membrane of the trachea and bronchi was nearly always markedly hyperemic and appeared swollen and deep red, this color being most marked in the intercartilaginous portions. In one case the mucosa was of nearly a normal pinkish gray, but marked with some hemorrhagic spots. Occasionally in some with a hyperemic mucosa there were hemorrhagic spots.

Bronchial Lymph Nodes.—The bronchial lymph nodes were in most cases (thirty-five) enlarged and swollen to a greater or less degree. In a few cases the enlargement was considerable and the nodes soft and edematous, attaining dimensions of from 25 to 30 mm. In five cases the glands are recorded as not enlarged. In the remaining cases they attracted no notice, and were probably normal in appearance.

Hemorrhagic Pleuritis.—One of the more or less striking, essentially constant gross lesions of influenza was what may be termed hemorrhagic pleuritis. By this is meant a bright or dull red spotting seen through the pleura on the surface of the lung. It appeared to be an extravasation of blood beneath the pleura, or else an extensive and local dilatation of the vessels of the surface of the lungs. These spots varied in size from those of a pin point up to spots of 5 or 6 or 10 mm. in diameter. They were irregular in shape, but in general round. The spots were usually more or less grouped together, and were frequently fused into large, hemorrhagic areas of several centimeters in diameter and of a very irregular shape. This subpleural hemorrhagic spotting might be found on any part of the lung. They were less commonly seen on the upper lobes. Sometimes they were much scattered and few in number, so that they were seen only on close examination. Frequently they were present in large numbers on the diaphragmatic surface of the lungs. They were about as common on the interlobular surfaces of the lungs as on the external surface. The interlobular spotting was more abundant, as a rule, toward the root of the lung than toward the periphery. When fibrinous deposits were on the

surface of the lung, these subpleural hemorrhagic spots were frequently found beneath them. They were never found on the parietal pleura. The latter, as a rule, was markedly hyperemic.

Pleural Fluids.—The amount and location of the effusion is shown in the accompanying table.

AMOUNT AND LOCATION OF EFFUSION

	No.	Per Cent.
No effusion on either side	9	16
Effusion present only on left side	23	41
Effusion present only on right side	16	29
When effusion was present on both sides it had the same volume on both right and left sides	4	7
It was larger on the left side	24	43
It was larger on the right side	19	34

When effusion was present, the average amount on the left side was 206 c.c., with extremes of 20 and 1,150 c.c., the latter occurring in a case of typical empyema. The largest nonpurulent effusion was 850 c.c. On the right side the average amount of fluid was 165 c.c., with extremes of 15 and 1,100 c.c., the latter occurring in a case of empyema. The largest nonpurulent effusion was 600 c.c. A definite pleural effusion was present in all but nine of the necropsies, or 84 per cent.

The pleural fluid was for the most part serous, and very dark or a light reddish brown, as though stained with blood pigment. In one instance the pleural exudate having a clear yellowish brown color appeared bile stained; this occurred in a case that showed marked jaundice. In many cases, fibrinous material was very evident and was found loosely adherent to the lung or to the chest wall. Nearly always, some fibrin could be found either as a few loose threads or as a scant deposit on the visceral pleura. In one instance the fibrinous deposit was a light dirty brown instead of the usual yellow, and was deposited in larger or smaller subcircular spots on the lung surface. The fibrinous material was often found deposited between the lobes of the lungs. In three cases the fibrinous material had a gelatinous-like quality, the exudate being quite transparent and the lungs appearing in places as though covered with thin patches of jelly. In eight cases the fluid was slightly or distinctly turbid, but not to such an extent that it could be called pus. In two cases the pleural exudate was purulent, and the condition of typical empyema was present.

Empyema.— Only two cases of the fifty-six (3.5 per cent.) developed a typical condition of empyema. The duration of one of these was twenty-one days. The presence of fluid in this case was not suspected either by physical signs or by roentgenography, and the presence of massive effusion, 1,150 c.c. left and 1,100 c.c. right, was a surprise at the necropsy. It was a fibrinopurulent exudate and entirely similar to the streptococcus empyemas seen during the winter of 1917-1918. The hemorrhagic pneumonitis had essentially disappeared from the lungs. Both lower lobes were atelectatic; the left upper lobe showed a bronchopneumnoia. Pneumococci were isolated from the pleural pus and also from the pericardial fluid, although the latter was clear and did not contain an excess of fluid. The other case was a right sided empyema, and during life a total of 2,120 c.c. had been aspirated. At necropsy an additional 200 c.c. of fibrinopurulent fluid was recovered. Cultures yielded hemolytic streptococci. In this case, death occurred on the seventeenth day. In several cases the pleural effusion was more or less turbid, but was not what would be called pus. The duration of the latter cases ranged from seven to twenty days following the initial onset of influenza.

CHANGES IN THE HEART AND PERICARDIUM

Pericardium.—None of the cases showed a fibrinous or purulent pericarditis. A moderate serous effusion was often present. Although the fluids were clear, they were often dark, as though somewhat blood tinged. The average amount of fluid was 21.7 c.c. Twenty-two cases had less than 10 c.c.; fourteen between 11 and 20 c.c.; twelve between 21 and 30 c.c.; one, 35 c.c.; three between 41 and 50 c.c.; two had 75 c.c., and two, 100 c.c. The pericardial fluids were so clear that cultures were seldom taken; but from the fluid in a case of pneumococcal empyema, pneumococci were obtained; and in a case of streptococcic empyema, *Streptococcus hemolyticus* was obtained. Pneumococci were also found in the pericardial fluid in one other case, pneumococci being isolated from the lungs as well. The visceral layer of the pericardium never showed any change except in one case, in which a few petechial hemorrhagic spots were seen on the left side. The parietal layer in four instances showed distinct hemorrhagic spots, one of these being the same case that showed the spotting in the cardiac layer. The spotting always occurred in the left side, and was associated with rather extensive subpleural spotting of the left lung.

Heart.—In the entire series the heart showed no evident pathologic changes. In twenty-seven protocols the right heart is mentioned as being moderately or slightly dilated, particularly the auricle, which was usually well filled with dark fluid blood. The right ventricle was much less distended. In nine cases the protocols state that the heart was not dilated. The matter is not mentioned in the other cases. The average weight of the heart in this series was 322 gm., with extremes of 210 and 460 gm.

A white thrombus starting in each ventricle and passing through the aorta and pulmonary artery was very frequently seen. It was long and thin, and as it passed the semilunar valves it had on it three small appendages of the same material as the thrombus, corresponding to each cusp of the semilunar valves. These thrombi gave the impression of an agonal formation and as perhaps being due to some increased coagulability of the blood.

CHANGES IN THE SPLEEN

Not many of the spleens could be called septic even though blood cultures yielded pneumococci or Friedländer bacilli. Twelve are mentioned as being either septic, enlarged and filled with soft dark semifluid material, or simply soft and with dark semifluid contents without being enlarged. The average weight of the spleen was 187 gm., with extremes of 85 and 350 gm. Three weighed less than 100 gm.; thirty-one, between 101 and 200 gm.; seventeen, between 201 and 300, and three over 300 gm. The organ usually felt firm and in general was a very reddish brown, because of congestion, though in a few cases it was comparatively pale.

CHANGES IN THE LIVER

The liver appeared rather pale, the color being mentioned as light yellowish brown as a rule. Even when having an essentially normal brownish color, the

organ usually revealed light yellowish brown mottlings though sometimes the latter were often small and indistinct. One liver in the series was bright yellow. Several of the others were rather yellowish. The yellowish one was associated with the bodies showing icterus. The livers varied in size from 950 to 2,770 gm., with an average of 1,767 gm. The lightest one occurred in a slenderly built person, and is described as showing no abnormality. The largest liver occurred in a person of large size and with considerable degree of subcutaneous and omental fat. Not infrequently the livers were congested, and considerable blood dripped from the cut surface. In one case the organ presented a nutmeg appearance, evidently a marked acute passive congestion.

CHANGES IN URINARY ORGANS

Kidneys.—No striking macroscopic changes were seen in the kidneys. Nearly all showed a rather well marked congestion, and on section considerable blood dripped from them. In a few the congestion was not intense, and in one case the kidneys are described as essentially normal in appearance. Owing to the large amount of blood present in the kidneys, they always appeared dark; but careful examination of the parenchyma between the distended blood vessels showed the color to be a rather light yellowish brown. The average weight of the right kidney was 170 gm., with extremes of 50 and 290 gm. The minimum of 50 gm. occurred in a case of hydronephrosis; the left kidney in that case weighed 220 gm. The average weight of the left kidney was 180 gm., with extremes of 115 and 360 gm. The heaviest kidneys, 290 and 360 gm., right and left, respectively, occurred in the case of a person who before having influenza had shown casts and albumin in the urine. Of thirty-four cases in which there are records of urinalysis, twenty-four (70 per cent.) showed albumin and casts; five (15 per cent.) showed albumin without casts; two (6 per cent.), casts without albumin, and in three (9 per cent.), the urine showed no abnormalities. It was noticed by the persons doing the urinalysis that an increase above what had previously been seen in the amount of albumin, and the appearance of large numbers of granular casts, were unfavorable signs, patients showing such a condition often being admitted to the morgue shortly after. It appeared that the kidney disturbance was an index of toxemia rather than an actual cause of death.

Bladder.—The bladder showed no pathologic change. Occasionally there was a slight hyperemia of the mucosa, but no more than frequently found in necropsies in cases of noninfectious diseases. Retention of urine was observed in some cases. Twenty-four contained over 200 c.c. of urine; eighteen over 300 c.c.; sixteen over 400 c.c.; eight over 500 c.c., and five over 600 c.c. The largest amount measured was 900 c.c.

CHANGES IN ALIMENTARY CANAL

The alimentary canal for the most part showed no gross changes that could be specially attributed to influenza. Its blood vessels were often engorged in various places, but this usually seemed to be the result of hypostasis. In nearly all cases there were hemorrhagic spots, often very conspicuous, seen in the stomach, but these were usually on the dependent parts of the organ where autolysis would be most apt to occur, and they did not seem to occur much more frequently or more numerously than is often the case seen in any necropsy. In two instances, as soon as the body was brought to the morgue a 10 per cent. solution of liquor formaldehydi was placed in the stomach. In neither of them when the necropsy was performed a few hours later was any hemorrhage found in the stomach. In a few of the cases the hemorrhagic condition seemed more than postmortem change, the hemorrhagic spotting occurring elsewhere than on the more dependent portions of the organ. Judged by the blackish or reddish brown contents of the stomach and upper intestine seen in some cases, there must have been some exudation of blood into the stomach during life. In two instances there were multiple ulcerated surfaces in the stomach. In a number of instances the solitary follicles of the ileum were more or less enlarged; in the colon they were enlarged less frequently. This condition was perhaps not more frequently seen than would be in any other series of necropsies.

CHANGES IN THE BRAIN

Twenty brains in this series were removed. One showed no apparent abnormalities; five of them showed marked congestion of the pial vessels, and the remaining fourteen showed either a slight or a moderate congestion. In addition to the congestion, seven showed a moderate amount of edema of the pia-arachnoid. One of them showed a marked clouding of the pia-arachnoid, in places so intense as to suggest a purulent infiltration. Cultures from the subpial fluid in the latter case yielded pneumococci, Friedländer bacilli and staphylococci: and association of organisms that were found in the lungs of this case at the same time. None of the brains were sectioned at necropsy but were placed in 10 per cent. solution of liquor formaldehydi and sent to the Army Medical Museum.

CONDITIONS IN OTHER ORGANS

Suprarenals.—There were no macroscopic changes that attracted attention. Some of the suprarenals were dark and evidently congested along with other organs. In some the medulla was soft and swollen, perhaps the result of autolytic changes.

Thymus.—In three of the necropsies the thymus gland was found to be considerably larger than usual. In one instance it extended half way down the pericardum.

Pancreas. — This appeared essentially normal throughout the series. Occasionally it showed some congestion.

Testicles.—No gross lesions were seen in the testicles.

SUMMARY

As shown by the gross pathologic lesions in fifty-six fatal cases of epidemic influenza at the Walter Reed General Hospital, the disease is one attacking primarily the respiratory tract, in which are uniformly noted a peculiar and intense congestion of the lungs with hemorrhage into the lung substance, having mainly a lobar type of distribution, the involved portions on section dripping blood and resembling a newly formed clot of blood; acute congestion of trachea and bronchi, without a purulent exudate; pleuritis, characterized by subpleural hemorrhagic spots, and frequently by exudation of moderate amount of blood tinged fluid. Nearly as constantly present are congestion of the kidneys and of the brain, parenchyma-

tous changes in the liver, an acute bronchial lymphadenitis, and a moderate dilatation of the right heart.

Secondarily a variety of other lesions developed, such as lobar and lobular types of pneumonia. The lobar types of pneumonia are not typical of the primary form of that disease. A moderate serous pericarditis may develop; very rarely a serofibrinous pericarditis may arise. The pleuritis may become markedly fibrinous. A true empyema may ensue as the result of the usual exciting organisms, but is uncommon. The secondary changes in the lungs appear to be due to various organisms of greater or lesser virulence which happen to be in the respiratory tract at the time of the original attack.

TRANSDUODENAL LAVAGE IN THE TREATMENT OF POSTOPERATIVE ILEUS

AND OTHER SURGICAL AND OBSTETRIC COMPLICATIONS

MAX ERNEST JUTTE, M.D.
Lecturer in Gastro-Enterology, and Assistant Visiting Physician, New York Polyclinic Medical School and Hospital
NEW YORK

A fatal issue in severe complications after laparotomy is so common that the introduction into surgery of a life-saving method in the treatment of these will be welcome. This report concerns six cases of postoperative ileus, a case of incessant hiccup, and also one of puerperal eclampsia, which were successfully treated by transduodenal lavage; every life was saved.

For those unfamiliar with this method, a few words of explanation will be necessary.

Transduodenal lavage flushes the bowel from pylorus to rectum and brings about powerful stimulation of peristalsis. This is accomplished by inserting a duodenal tube just beyond the pyloric muscle, and allowing a sufficient quantity of fluid to run through the tube into the bowel to produce a thorough flushing. The fluid must be slightly hypertonic, so as to remain unabsorbed in its passage along the intestinal tract.

At the New York Polyclinic Hospital, results were observed from transduodenal lavage in medical cases which led to its employment, there and elsewhere, in six cases of postoperative ileus, of which Case 1, the first, is typical:

CASE 1.—A woman, aged 50, had had a severe gynecologic operation. Fecal vomiting set in and continued, although everything was done to counteract the condition. The outcome was no longer in doubt; death was certain. As a last resort, transduodenal lavage was suggested and given a trial. No difficulty was experienced in introducing a Jutte duodenal tube, which comes provided with an obturator. The fecal contents of the stomach were then diluted with warm water and siphoned out with the aspirating apparatus which is part of the outfit, and the tube then slipped at once into the duodenum, as shown by the test mentioned in previous papers. The rest of the technic was the same as usual,[1] except that for the purpose of stimulating intestinal peristalsis, the temperature of the irrigating solution was made higher than usual (from 110 to 115 F.). In fifteen minutes there was a precipitous evacuation followed by others.

1. Jutte, M. E.: Autointoxication and Its Treatment by Transduodenal Lavage, Am. J. M. Sc. **153**: 732 (May) 1917; The Technic of Transduodenal Lavage in Office Practice, With or Without Oxygen Insufflation, M. Rec. **92**: 499 (Sept. 22) 1917.

In the foregoing case and in each of the subsequent cases, only one lavage was necessary, for as soon as normal peristalsis had been reestablished, it continued without interruption. All six patients made an uneventful recovery.

Another striking case is one of incessant hiccup:

CASE 2.—A man, aged about 40, who had been operated on at the Presbyterian Hospital for perforated ulcer of the stomach, two days later began to hiccup incessantly, and continued to do so for ten days. Here, too, everything known had been done, but without beneficial results. The patient was doomed. The hiccup was stopped by one treatment of transduodenal lavage, and the man is alive and has not hiccuped since.

In explaining these results, it seems reasonable to attribute them to the stopping of reversed peristalsis and the reestablishment of normal peristalsis, the probable cause of the fecal vomiting and of the hiccup being reversed peristalsis brought about by the operation.

A case of postpartum eclampsia, successfully treated by transduodenal lavage, is no less remarkable:

CASE 3.—A woman residing at Newburgh, N. Y., after a protracted period of vomiting during pregnancy, and after parturition, had suppression of urine and became completely edematous. She was in extreme prostration and had been in coma for twenty-four hours. Dr. Bernard Levinson of that city was called in consultation and administered a transduodenal lavage, which was followed in eighteen hours by another lavage. Shortly after that the urine began to flow freely and the patient rapidly regained consciousness; she is now alive and well. This case illustrates well the stimulating effect of transduodenal lavage.

Toxemia of pregnancy offers a promising field for the employment of transduodenal lavage. A few years ago, McDonald[2] reported twelve such cases, which were successfully treated by one lavage each.

I take this opportunity to say that since my first announcement[3] of this new method, which I named transduodenal lavage, several papers have been written by others, dealing with transduodenal lavage, but under slightly different names. The terms which the writers used have been inapt and misleading; the ingredients employed in my solution have been replaced by others, different in name but identical in action.[4]

124 West Fifty-Fifth Street.

2. McDonald, E.: Treatment of the Toxemia of Pregnancy by the Duodenal Enema, M. Rec. **86**: 102 (July 18) 1914.

3. Jutte, M. E.: Transduodenal Lavage: A New Method in the Treatment of Chronic Ailments, with Report of Results in Asthma and Pernicious Anemia, New York M. J. March 16, 1912.

4. In addition to the references already given, the following will be found of interest:
Aaron, C. D.: Treatment of Intestinal Stasis by Duodenal Lavage, M. Rec. **94**: 268 (Aug. 17) 1918.
Jutte, M. E.: Transduodenal Lavage: Treatment and Report of Some Cases of Chronic Diseases, J. A. M. A. **60**: 586 (Feb. 22) 1913.
Palefsky, I. O.: Irrigation, Transinsufflation and Visualisation of the Intestines by the Duodenal Tube, New York M. J. **102**: 119 (July 17) 1915.
Ramirez, M. A., and Hoguet, J. P.: Ileocecal Insufficiency, New York M. J. **108**: 146 (July 27) 1918.

Treatment of Functional Paralyses.—Functional paralysis and contractures of all kinds are psychogenic and due to an "idea" generally arising in a psychogenic individual. The idea of the disability tends to become fixed and firmly installed in the minds by daily massage and electricity, especially when carried out by sympathetic women. These cases can be cured by faradism and persuasion in two or three sittings. The cases should afterward be treated by appropriate exercises.—Lieut.-Col. F. W. Mott, Preface to Gymnastic Treatment for Joint and Muscle Disabilities.

SUBCUTANEOUS EMPHYSEMA

WITH THE REPORT OF SEVERAL CASES, PARTICULARLY ONE WITH VERY EXTENSIVE GENERALIZED EMPHYSEMA *

M. E. ALEXANDER, M.D.
Resident Physician, Waterbury Hospital
WATERBURY, CONN.
AND
E. C. FOLLETT, M.D.
Instructor in Pathology and Bacteriology, Bowdoin Medical School
BRUNSWICK, MAINE

Subcutaneous emphysema is referred to in medical literature under various other names, as for instance, surgical emphysema, cellular emphysema and traumatic emphysema. Subcutaneous emphysema may be defined as a condition in which atmospheric air or other gases are found in the subcutaneous tissues. We are concerned here only with the simple emphysema. The inflammatory or gangrenous emphysema is not included.

The subcutaneous tissues are made up largely of areolar connective tissue, which thus permits of a great deal of distention. In either localized edema or in anasarca the accumulated fluids are in these areolar spaces. Similarly in subcutaneous emphysema the entrance of air into these spaces meets very little resistance, and thus the skin becomes distended to a variable extent. In the article on areolar tissue in Garrish's textbook of anatomy,[1] there is a striking picture, a drawing of a man with generalized subcutaneous emphysema. Besides being present in the subcutaneous tissues, areolar connective tissue is also found abundantly in the cellular tissues surrounding muscles, vessels and viscera. Hence emphysema may also occur in and about the various internal organs. There is a case on record[2] of an extensive emphysema of the internal organs, found in a child after having lived ten years with general emphysema.

ETIOLOGY AND CLASSIFICATION

Congenital Emphysema.—This is a very rare occurrence. Nevertheless, there are a few cases on record.[3] This is either a result of rupture of a few pulmonary vesicles in the act of the first cry, or a result of some congenital malformation of the respiratory passages with the result of an inrush of air into the subcutaneous tissues with the first breath.

Emphysema in Infants.—Rupture of some pulmonary vesicles with the result of subcutaneous emphysema has been observed by various authors.[4] It is generally considered that some congenital weakness of the lung preexisted in these cases. A violent exertion or coughing fit causes a rupture of some pulmonary vesicles, and permits the escape of air into the interlobular or interlobar spaces. From here the air passes along the root of the lung, through the anterior mediastinum to the root of the neck, and may thence spread to the chest and the arms, or all over the body.

Traumatic Emphysema.—*A.* Of External Origin: Various wounds, such as stab wounds produced by a lance or bayonet, may result in an inrush of air into the wound producing emphysema of variable extent. Many such cases have been reported. Some of them have become classical and are frequently cited, such as the case described by Larrey.[5]

Puncture wounds, even such as those produced by an ordinary medium-sized exploratory needle, have been known to produce emphysema, even of a very extensive variety. Evans[6] reports a case of generalized emphysema following an exploratory aspiration of the chest. We have encountered a case of extensive emphysema following the insertion of trochar and cannula for the introduction of a catheter in the treatment of empyema with irrigation of neutral solution of chlorinated soda (Dakin's solution).

CASE 1.—A woman, aged 24, with empyema of the right side of the chest, when a trocar and a cannula had been inserted and the trocar had been withdrawn, in order to allow the pus to run out through the cannula, turned unexpectedly, which caused the cannula to slip out of the pleural cavity. Suddenly the patient became quite dyspneic and complained of a distressing sensation of tightness and oppression in the chest The trocar had become unsterile, and we had to wait for its resterilization. In the meantime, firm pressure was applied to the puncture wound. When the cannula was reinserted the distressing symptoms all disappeared, but distinct subcutaneous crepitus was soon observed extending to the floor of the mouth above, and down to the abdomen below. The air gave rise to no disturbance, was all absorbed at the end of two weeks, and the patient made an uneventful recovery.

In many of these cases it is hard to decide whether the emphysema is of external origin or of internal origin due to an injury to the lung. For instance, there is a case[7] on record of a soldier sustaining a bayonet wound of the buttock, with the development of an extensive emphysema soon afterward. It is difficult to see how a wound in that region could injure any air-containing viscera. Col. Nathan Raw, however, has, in connection with this case, demonstrated on the cadaver that a knife 8½ inches long could be pushed up from the buttock behind the peritoneum along the muscles of the back, pierce the diaphragm and injure the lungs.

B. Of Internal Origin: 1. Gastro-intestinal. Subcutaneous emphysema has been described as a result of the rupture of almost any part of the alimentary canal, as for example the esophagus, the stomach or the rectum.

Pierce[8] describes a case of generalized emphysema in a drunkard that gave neither evidence nor history of any external traumatism. At necropsy there was found an ulcer of esophagus with a sinus leading to an abscess of the stomach situated near the cardiac end. The ulcer had ruptured, with the escape of food into the mediastinum and air into the subcutaneous tissues.

A case of general emphysema following rupture of the stomach is described by Newman.[9] This occurred in an insane patient. At necropsy the lungs and

* From the Surgical Wards of the Waterbury Hospital.
* Read before the Waterbury Medical Association, Feb. 10, 1919.

1. Garrish, F. H.: A Textbook of Anatomy by American Authors, Ed. 2, 1902, p. 48.
2. McNab, D. R.: Med. Times and Gaz. n. s. **2**: 314, 1843.
3. Lvov, M.: O podcozhnoi emphysemi rasvivaousheisa vo vremja rodov. (On congen. subcut. emphysema) Med. Vestnick **20**: 265, 274, 1880.
4. Ozanam: Sur les ruptures pulmonaires ches les enfants, et de l'emphysème que lui succède, Arch. gén. de méd. 5 S. **3**: 31-53, 1854. Welchel, H. C.: Subcutaneous Emphysema in a Child Due to Foreign Body in Bronchi, J. M. A. Georgia **6**: 249 (April) 1917. Le Soudier: Arch. de méd. d. enf. **20**: 360 (July) 1917.
5. Larrey: Mémoire de chirurgie militaire, English translation by R. W. Hall, Baltimore, 1814.
6. Evans, J.: General Subcutaneous Emphysema Following Aspiration of Chest, Lancet **1**: 220, 1889.
7. Hayward, J. D.: Emphysema and Punctured Lung from Bayonet Wound of Buttock, Lancet **2**: 199 (Aug. 11) 1917.
8. Pierce, W. H.: An Unusual Cause of Emphysema: Necroscopy, Lancet **2**: 1221, 1886.
9. Newman: General Emphysema Following Rupture of Stomach, Lancet **2**: 728, 1868.

pleurae were found normal. The peritoneal cavity was extremely distended with air, and the stomach was ruptured.

Erichsen[10] reports a case of perineal emphysema spreading to the upper parts of the body from puncture of the bladder through the rectum, for retention.

2. Air Passages: What is true of the alimentary canal is true of the air passages. The rupture of almost any part may produce the emphysema, for example, the nose and accessory sinuses, the larynx, trachea and bronchi, or the lungs. Compound fracture of the nose has been known to produce quite extensive emphysema. It most frequently follows an attempt to blow in order to dislodge an annoying blood clot. Similarly, emphysema has been known to follow injuries to the accessory sinuses, especially the frontal sinus. The earliest case of this kind on record is probably the one reported by Morgan:[11]

These cases are evidently not very rare. We have encountered three such cases within the last three years. One of them presented an emphysema extending down to his abdomen. Necropsy showed a fracture of the frontal bone through the frontal sinus.

Subcutaneous emphysema may also follow injury to the antrum of Highmore and to the mastoid process.[12]

Attempts at inflating the middle ear not infrequently produce a submucous emphysema of variable extent. Instead of entering the eustachian canal, the tip of the instrument is forced under the mucous membrane, and in the process of inflation air is forced into the submucous tissues much to the patient's alarm. In some cases the emphysema thus produced may be quite extensive, and has been known[13] to reach the root of the neck.

Emphysema may be caused by tuberculosis and malignancy of the larynx,[12] or by wounds of the trachea. A tracheotomy may give rise to very extensive emphysema if the external opening is too small.[14] Erosions following foreign bodies in the bronchi have been known to produce emphysema, such as in a case reported by Whelchel.[15].

Wounds of the lungs quite frequently occasion emphysema.[16] The overlying skin may or may not be affected. It is also very commonly associated with, or rather a result of, fracture of one or more ribs. Localized emphysema is very common in connection with these accidents. They are frequently overlooked. As a rule, these cases are associated with very extensive injuries, such as result from being run over, falling down stairs, etc. The mechanism of the phenomenon is simple. The point of the fractured rib injures the costal pleura, visceral pleura and lung tissue, but not the overlying skin. During inspiration the lung expands and air rushes into the pleural cavity through the laceration. During expiration the lung collapses; the laceration becomes closed, so that the expiratory effort can not drive the inspired air back through the same opening, but drives it into the distensible subcutaneous tissues instead.

Emphysema of the Tissues Surrounding an Abdominal Wound After Laparotomy.—This is a rather curious manifestation, yet on reflection one need not marvel over its occurrence. During the operation air enters the peritoneal cavity, and we may readily assume that at times quite an amount may remain in the cavity after the peritoneum is sutured up. Under normal conditions the enclosed air becomes absorbed very readily. Occasionally, however, it may remain for a long time, and should the patient strain or cough, the enclosed air may find its way through the sutured peritoneum and into the subcutaneous structures.

CASE 2.—A man, aged 25, had appendectomy performed, in January, 1917. It was an interval operation, and it seemed perfectly safe to close the abdomen without drainage, which was done. Two days after the operation the patient developed a distressing cough. The temperature was 101.4 F., pulse 110, respiration 28. Next day the patient's temperature rose to 102, and he also complained of a discomfort about the incision. The wound was dressed, January 28, the fourth day after the operation. There were no signs of inflammation, but gaseous crepitus was distinctly felt around the wound and extended for a distance of 4 inches to each side. The patient's temperature was without a doubt due to bronchitis. The air was all absorbed at the end of fourteen days, and the patient made an uneventful recovery.

Similar cases have been recorded from time to time. Von Graefe[17] reported two such cases in 1894. Von Caspersohn[18] reported one in 1895. The air, in his case, showed no tendency to be absorbed, and incision was made on the twentieth day after operation. Von Heil[19] reported one case in 1896 and another in 1900. Madlener[20] has written a comprehensive article on this subject, and estimated the number of cases reported to be above twenty-five.

Spontaneous Emphysema.—By this term is meant the occurrence of emphysema after extensive subcutaneous extravasation of blood. This subject has been widely disputed, and many doubt the possibility of its occurrence. Nevertheless, many authorities attest to its possibility. Valpeau described it as occurring not infrequently in connection with fractures, particularly of the shoulder.[21] According to H. Fischer,[22] the emphysema appearing in these extensive hematomas is due to gases produced by the action of acids, such as lactic acid, on the contained blood. He demonstrated these acids in contused tissues, and has also produced emphysema experimentally by injecting lactic acid into hematomas experimentally produced in animals. In one such experiment these gases were demonstrated to be carbon dioxid.

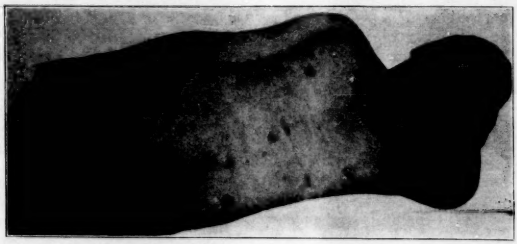
Emphysema During Labor.—This is not encountered very frequently; nevertheless there are a number of cases on record, some of them very extensive in nature. It usually occurs in the second stage of labor, during

10. Erichsen: Perineal Emphysema, Lancet **1**: 89, 1860.
11. Morgan: Fracture of the Frontal Bone into the Frontal Sinus with Extravasation of Air Into the Cellular Membranes of the Eyelids, Lancet **10**: 31, 1826.
12. Lexer, Erich: General Surgery, 1908, p. 523.
13. Personal communication from Dr. Carl C. Munger, Waterbury, Conn.
14. Ashley and Wright: Diseases of Children, American Ed., 1893, p. 186.
15. Whelchel, H. C.: Subcutaneous Emphysema in a Child Due to Foreign Body in Bronchi, J. M. A. Georgia **6**: 249 (April) 1917.
16. Since this paper was written, Clark and Synnott (Am. J. M. Sc. **158**: 219-221 (Feb.) 1919) have reported twenty cases of subcutaneous emphysema observed in connection with influenzal pneumonia during the epidemic at Camp Dix. The "gas" first made its appearance in the subcutaneous tissues at the base of the neck "anteriorly and laterally and over the upper portion of the chest from the clavicle to about the third rib." In one of the cases the emphysema extended to the cheeks, eyelids, arm, abdomen and flanks. From postmortem investigations made in three of the cases, the origin of the gas was from "weakened alveoli of the lung under pressure, . . . and reached its distribution as a result of purely mechanical factors."
17. Von Graefe: München. med. Wchnschr., p. 823, 1894.
18. Von Caspersohn: Zentralbl, f. Gynäk., p. 1328, 1895.
19. Von Heil: Arch. f. Gynäk. **52**: 435, 1896; München. med. Wchnschr., p. 1208, 1900.
20. Madlener, Max.: Das Haut-Emphysem nach Laparatomien, Monatschr. f. Geburtsh. u. Gynäk. **13**: 1901.
21. Tillman, H.: Textbook of Surgery **1**: 474, 1901.
22. Fischer, H.: Ueber das traumatische Emphysem, Samml. klin. Vortr., Chirurgie, pp. 427-444, 1874.

the period of expulsion. Owing to excessive straining some pulmonary vesicles rupture, and emphysema results. It becomes manifested first at the root of the neck. Judging from the remarks made by the authors that have reported cases, the condition is not seen very commonly, most of them not having encountered a similar case before. Some of the more recently reported cases are by Milne,[23] Murray,[24] and Fabre and Trillat.[25] Scheffelaar Klots[26] has written a comprehensive article on this subject and has collected forty cases from the literature.

Generalized Emphysema.—In reviewing the literature, one finds reports of a considerable number of cases of generalized emphysema. Nevertheless, one may conclude that it is not very common, as is evidenced by the remarks of a great many of the observers that it is the only case of the kind they have ever seen. When well developed, the condition is so striking and so impressive that it may be safely assumed that the cases in the literature are the records of perhaps the greatest percentage of the cases observed. We may, therefore, be justified in reporting the following case in detail:

Case 3.—*History.*—J. S., a farm hand, aged 69, with a negative past history, fell down five steps, Jan. 1, 1918, and struck the right knee and the side of the chest. He complained of sharp pain in the chest, but with slight help he was able to walk outdoors and for some distance toward the barn. Very soon, however, he felt worse and was carried upstairs and put to bed. About two hours later he noticed that he was beginning to be puffed up, and by morning he found that his eyes were so swollen that he was unable to open them. Dr. Robbins was called in and advised removal to the hospital. The patient was admitted to the Waterbury Hospital, January 2, at 2 p. m.



Generalized emphysema: condition day after admission to the hospital.

Examination.—On admission the patient was found to be markedly dyspneic and universally bloated, presenting a condition not unlike that of extreme anasarca from Bright's disease. His temperature on admission was 99 F., pulse 94, respiration 24. On physical examination this generalized swelling was found to be an emphysema involving the entire body, with the exception of the scalp, palms of the hands and soles of the feet. The eyes were so puffed up that no effort availed to open them. The lips were extremely swollen, making articulation and even opening of the mouth very difficult. The voice was very high-pitched and cackling in character, not unlike that of a hen. The penis was extremely swollen and distorted, and the patient had been unable to void for ten hours prior to admission. The scrotum was as large as a good-sized grapefruit, and the abdomen gave the impression of extreme ascites.

On palpation the characteristic crackling crepitus could be felt all over the body except the scalp, the palms of the hands and the soles of the feet. Bony crepitus could be felt over the lower ribs on the right side, but it was impossible exactly to determine which ones were involved. The apex beat could not be felt. On auscultation over the site of fracture a shrill, high-pitched sound could be heard, inspiratory in time, and a distinct, loud, jarring noise during expiration. Both sounds were accompanied by numerous crackling crepitations evidently right under the stethoscope. The heart sounds were distant and hard to elicit. The neck was 19 inches in circumference, the forehead, 23 inches, the chest at the level of the axillae, 43 inches, and at the level of the nipples, 38½ inches, and the middle of the arm, 15 inches. It is probably useless to cite all the other measurements taken. The condition of the patient is shown in the accompanying figure.

Subsequent Course and Treatment.—The patient was quite dyspneic, rather cyanosed, coughed a great deal, and expectorated some tenacious sputum tinged with blood. The patient's chest was strapped tightly with adhesive straps and one-fourth grain of morphin given hypodermically, and one-sixth grain of morphin was left to be given rather freely as circumstances required. The patient was somewhat more comfortable after the morphin and strapping, but was still in considerable distress the first night. Next morning, however, he felt much better. The emphysema had not increased, and the pain in the chest was much less. The dyspnea was less urgent, although swallowing was still difficult. In view of the slight improvement, we decided to leave the patient alone and to make no punctures to serve as outlet. For the next two days the patient's condition remained about the same; but afterward rapid improvement was noticed, and by the end of the week the patient's condition seemed to be exceedingly good; in fact, he seemed to be out of danger.

Fluoroscopic and roentgenographic examinations made six hours after the strapping of the chest showed the fractured ribs to be in good position.

Physical examination of the chest at the end of the first week was still rather difficult because of the interference of the superficial layer of air; nevertheless, the affected side was distinctly tympanitic to percussion as compared with the opposite side. On auscultation the breath sounds were feeble and distant as compared with the exaggerated breath sounds on the opposite side. Metallic tinkling and the coin sound, or the *bruit d'airain* of Trousseau, were distinctly heard. The patient evidently had a pneumothorax. Succussion sounds were negative.

Examination of the urine, blood and sputum disclosed nothing of special interest.

The patient continued to make an uneventful recovery. By the end of ten days practically all the air had disappeared except in the arms and scrotum, where it could still be detected for another week, at which time it had entirely disappeared. He was a fairly well developed man, thin in face and neck and otherwise without much subcutaneous fat. He was discharged, January 30, cured.

ANATOMIC EXTENT OF SUBCUTANEOUS EMPHYSEMA

The exact distribution of the emphysema varies in different cases. It depends on the extent of adherence of the skin to the subjacent structures. The scalp, the palms of the hands and the soles of the feet are very seldom involved. I could find no mention in the literature of any cases in which the emphysema extended to these parts of the body. In some cases, because of scars or adhesions from other causes, certain parts that are usually affected may escape, as was

23. Milne, G.: Subcutaneous Emphysema During Labor, Brit. M. J. **1**: 262 (Feb. 24) 1917.
24. Murray, J.: Surgical Emphysema During Parturition, Brit. M. J. **1**: 14 (Jan. 6) 1917.
25. Fabre and Trillat: Emphysème sous-cutane au cours de la periode d'expulsion, Bull. Soc. d'obst. de Paris **11**: 44, 1908.
26. Scheffelaar Klots: Ztschr. f. Geburtsh. u. Gynäk. **41**, No. 3.

true in a case reported by Buchanan,[27] in which, though the chest, abdomen and face were extremely swollen, the eyes escaped entirely. The part over the patella frequently escapes, but in the case just reported there was as much air over the patella as over the rest of the limb.

INDUCED SUBCUTANEOUS EMPHYSEMA

In 1885, Silvester[28] published an article advocating the employment of induction of emphysema as a life-saving device. He demonstrated that if a dog "be blown up" he will support and prevent from drowning one or more human beings. Before the Royal Academy of Science he introduced a cannula into an individual's wrist and induced a generalized emphysema with the aid of a small pump. For the self-induction of emphysema he advocated a still "simpler" device. When one is in peril from drowning one may puncture, with any sharp instrument, the floor of the mouth near the base of the gums. With the finger of the other hand as a guide, the tissues are penetrated till the superficial fascia of the neck is reached. The mouth and nostrils are closed, and with each expiratory effort air enters the subcutaneous tissues and extensive emphysema may thus be produced, enough, according to the author, for the individual to float an indefinite length of time. This measure has evidently never been received with enthusiasm, not even during war time.

Complications of Subcutaneous Emphysema.—These are (*a*) extension to the mediastinum; (*b*) extension to the internal organs; (*c*) hemopneumothorax and pyopneumothorax, and (*d*) erysipelas and cellulitis.

PROGNOSIS

Generally speaking, prognosis is good; but it depends on the origin and the complications. The extent of the emphysema seems to play only a small part. The emphysema brought about by the rupture of the stomach or intestine is uniformly fatal. The emphysema resulting from injury to the lung generally has a good prognosis except for the complications. Extension of the emphysema to the mediastinum is uniformly fatal. We found in the literature twenty cases of generalized emphysema produced by fracture of ribs, with no external openings; of these, three cases ended fatally (15 per cent.). Death in two of these cases resulted from collapse of the lung and hemopneumothorax, and one patient died from extension of the air into the mediastinum. Absorption of the air in emphysema generally takes place in from one to three weeks.

TREATMENT

That the slight and limited subcutaneous emphysema requires no special treatment and no operative procedure is universally accepted. About the extensive and generalized emphysema, the opinions differ. In consulting some of the old authors on surgery, we find that they also disagreed about the procedure in these cases. Abernethy,[29] for instance, was of the opinion that these patients do best when left alone. In two cases in which he operated death ensued. He also recommended the firm bandaging of the chest with towels or adhesive plaster:

> In whatever state the lungs happen to be when they are wounded, a bandage, if it can be borne, seems to me extremely useful. By means of it the pain and irritation which the motion of the fractured ribs must otherwise occasion are in a great measure or entirely prevented.[30]

Samuel Cooper,[31] on the other hand, recommends multiple incisions and condemns the use of bandages. Larrey[5] also recommends multiple incisions.

Of the more modern authors, Bryant[32] and Lucas[33] both recommend multiple punctures. Von Bramann[34] advocates the insertion into the pleura of a tube provided with a valve which prevents the escape of air into the tissues. Lexer[35] is in favor of bold surgical procedure. He advises the stopping of the exit of air by means of tamponing, suturing the pleura or the insertion of the Bramann tube just mentioned. Keen,[36] on the other hand, advises leaving it alone unless the distress is extreme, when multiple punctures are advocated. Vaughan[37] says that emphysema "requires no treatment unless excessive, when multiple punctures in the skin and the application of bandages to the chest may be necessary."

From a review of the modern literature the general opinion seems to be that subcutaneous emphysema generally requires no special treatment beyond that of the condition causing it. It does not materially influence the prognosis, except when the emphysema extends to the mediastinum and internal organs. In emphysema ocurring during labor, the patient should be instructed to be very quiet and not to strain, and the child would best be delivered with forceps. In all cases of emphysema, coughing and straining should be allayed by the aid of morphin. Strapping of the chest should be tried, but should be abandoned if the pain and discomfort are aggravated thereby. Punctures and incisions are generally unnecessary. and should be made only in extreme cases.

27. Buchanan, G. B.: Note on a Case of Extensive Surgical Emphysema, Lancet **2**: 1682, 1907.
28. Silvester, H. R.: Lancet **1**: 11, 1885; **2**: 418, 1885.
29. Abernethy, John: Surgical Works, London; Longman, Hurst & Co., 1816, pp. 170-187.
30. Abernethy, John: Surgical Works, p. 182.
31. Cooper, S.: Surgical Dictionary, Ed. 6, New York, Harper and Brothers **1**: 342, 1836.
32. Bryant, Thomas: Rapid and Extensive Emphysema Treated at Once with Marked Relief by Multiple Punctures of the Skin, Brit. M. J. **1**: 163, 1884.
33. Lucas, R. C.: A Case of Traumatic Emphysema; Tapping; Recovery, Brit. M. J. **1**: 812, 1895.
34. Von Bramann: Ueber die Bekämpfung des nach Lungenverletzung auftretenden allgemeinen Körperemphysems, Chir. Kongr. Verhandl. (1893) Disk. König.
35. Lexer, Erich: General Surgery, 1908, p. 524.
36. Keen, W. W.: An American Text Book of Surgery, Philadelphia, W. B. Saunders & Co., 1903, p. 710.
37. Vaughan, G. T.: The Principles and Practice of Surgery, Philadelphia, J. B. Lippincott Co., 1903.

Mosquito Eradication.—The report of the Atlantic County Mosquito Extermination Commission for 1918 shows that during 1918 there were constructed 407,839 feet of ditches, and that since 1913, when the work began, 5,866,514 feet of ditch have been made. This has resulted in a decided improvement in the mosquito situation in Atlantic City and the surrounding resorts and towns throughout the county, though it is a constant fight to keep what has been gained by the preventive operations. Mosquitoes of the salt marsh variety, as well as the common house mosquito, must be constantly fought; and it is a matter of persistent vigilance to prevent the breeding of the pests in every hole or receptacle that will hold even a small quantity of water. Citizens do not always cooperate as they should about their places. During 1918, Atlantic City was free from mosquitoes except on two nights, and the surrounding resorts had almost as good a record. During the year, 1,124 acres of salt marsh were drained, and previously 18,756 acres had been drained. The total area drained constitutes about 30 per cent. of the area requiring drainage. The expenditures for 1918 were about $23,000.

MAGNESIUM AND CANCER*

SHIGEMITSU ITAMI, M.D.
NEW YORK

There has appeared recently an article by Dubard,[1] wherein the author suggests the administration of magnesium salts to cancer patients who have undergone operation, in order to lessen the chances of recurrence. The same agent had been used some twenty years before by Gaucher and Herscher,[2] who reported favorable results after the application of a paste of magnesium chlorid to an ulcerated epithelioma of the lower lip. Regnault,[3] also, was encouraged by the outcome following the internal administration of magnesium salts in cases of inoperable cancer, and has accordingly been using them systematically in the hope of avoiding recurrence.

It is fortunate that experimental cancer research permits such suggestions as these to be examined in the laboratory, for the clinician's obligation to save human lives imposes on his investigations a restriction that does not hamper the experimental pathologist.

A laboratory devoted to cancer research, again, can command various types of tumor, such as a transplantable mouse carcinoma (Bashford's 63), which grows progressively, another carcinoma (Bashford's 206), which often recedes after growing for two or three weeks, a number of spontaneous mouse carcinomas, etc.

Of these three types, the two transplantable carcinomas should yield more easily to therapeutic attack than the spontaneous growths, since the former consist of mouse cells growing in mice other than those in which they first became cancerous; hence it may be assumed that they are proliferating under conditions less favorable than those surrounding a spontaneous neoplasm, whose cells are those of the very mouse to which they are native. And of the two transplantable growths, 206 should be more easily influenced by treatment, since its cells are so delicately balanced that this tumor often regresses without any treatment whatsoever.

Yet the intravenous injection of magnesium chlorid in doses of from 0.003 to 0.007 gm., an amount which is relatively five or eight times larger than the toxic dose for man (3 to 4.5 gm.), was without effect on these two mouse tumors, even when two or three treatments were given within a few days (Fig. 1). This was also the case when medication was begun within twenty-four hours after introduction of the tumor graft—that is, before it had become vascularized and at a time when it was therefore most vulnerable (Fig. 2). Spontaneous neoplasms, also, pursued their course quite uninfluenced by the treatment (Fig 3). The arrows show the time when magnesium was injected.

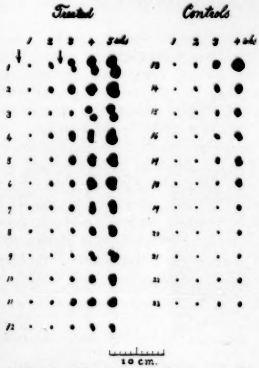


Fig. 1.—Mice 1 to 12, bearing Carcinoma 63, were treated twice with magnesium—five and sixteen days after the tumor was inoculated. Mice 13 to 23 were normal untreated controls. At the end of the fourth week the tumors in the treated animals were larger than those in the controls.

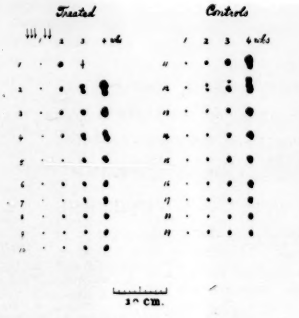


Fig. 2.—Mice 1 to 10, bearing Carcinoma 206, were treated five times with magnesium—two, four, six, eight and ten days after the tumor was inoculated. Mice 11 to 19 were normal untreated controls. The magnesium exerted no effect on the growth of the tumors.

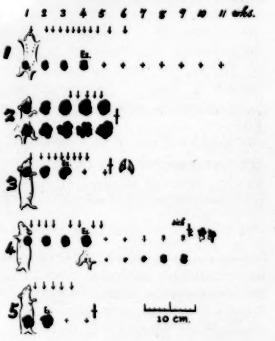


Fig. 3.—Mice 1 to 5, bearing spontaneous carcinomas, were treated from five to eleven times with magnesium, without influence on the growth of their tumors. In Mouse 4, a recurrence appeared within the third week after the last (eighth) treatment; this is ahown at the ends of the small vertical which, by convention, represent the operation scar. Furthermore, a new growth was discovered in the right groin, just after the sixth treatment, and at necropsy the lungs were found to be extensively involved by metastases. In Mouse 3, also, the treatment did not prevent the occurrence of metastases in the right lung.

Not only were no tumors cured in 175 animals, of which the three groups here reproduced are a fair sample, but in one mouse which was being injected with a view to preventing, if possible, the recurrence of a spontaneous neoplasm previously extirpated, a secondary growth appeared about three weeks after the eighth injection; furthermore, a new spontaneous tumor arose during the treatment (Mouse 4, Fig. 3). Both the recurrent and the new tumor must have consisted at first of a small group of cells; yet even these growths, which might almost be called incipient, were entirely untouched by magnesium.

Needless to say, all the tumors concerned in the experiment were submitted to microscopic examination, in order that their carcinomatous nature might be proved.

Since carcinomas of the mouse are quite comparable to those in man, arising in animals that have

* From Columbia University, George Crocker Special Research Fund, F. C. Wood, director.

1. Dubard: Bull. de l'Acad. de méd. **79**: 295, 1918.
2. Gaucher and Herscher: Ann. de dermat. et de syph. **10**: 964, 1899.
3. Regnault: Bull. gén. de therap. **168**: 737, 1915-1916; Bull. de l'Acad. de méd. **80**: 29, 1918.

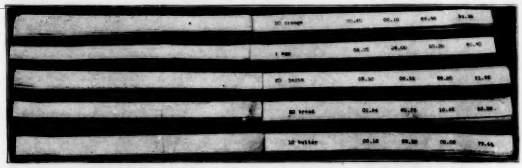
passed middle life, invading the surrounding structures, metastasizing by both blood and lymph channels, and ultimately destroying life, these experiments cast serious doubt on the value of magnesium in the treatment of human neoplasms. In fact, the assertion may be ventured that this element will prove to be useless. It is in order that this knowledge might be gained as quickly as possible and with the sacrifice of animal rather than of human lives, that the experiments described in this paper were undertaken.

Clinical Notes, Suggestions, and New Instruments

A FILING METHOD HELPFUL IN FIGURING CALORIC FOOD VALUES

ROSE DONK, M.D., BUFFALO

The figuring of diets that shall have certain desired values in protein, fat and carbohydrate is tedious and time consuming. Attempts to overcome this difficulty by the use of approximate values are of most uncertain success. The tables procurable for common measure are incomplete, and their use not only does not save time, but is likely to cause gross error.



Booklets arranged to show values for 50 gm. of orange, 1 egg, 20 gm. of bacon, 20 gm. of bread and 10 gm. of butter. The first column of figures represents the number of grams of protein in each; the second, the number of grams of fat, and the third, of carbohydrate. The fourth column represents the number of calories.

It is necessary to use the metric system. The diet is to be made out according to the number of grams of protein, fat and carbohydrate that are desirable.

The tables of Atwater and Bryant[1] are most convenient as a basis of computation. These tables give the percentage of protein, fat and carbohydrate in various foods. They give the fuel value per pound. The fuel value per hundred grams would be more convenient for the present purpose and it must be figured out. If, in estimating a diet, one refers directly to the tables, one must estimate the caloric value by multiplying the number of grams of protein by 4.1, the number of grams of fat by 9.3, and the number of grams of carbohydrate by 4.1, that is, by the fuel value for a gram of each. For example, 100 gm. of boiled potato (Atwater and Bryant) contain 2.5 gm. of protein, 0.1 gm. of fat and 20.9 gm. of carbohydrate.

The caloric value of 2.5 gm. of protein equals 2.5 multiplied by 4.1, or 10.25 calories.

The caloric value of 0.1 gm. of fat equals 0.1 multiplied by 9.3, or 0.93 calory.

The caloric value of 20.9 gm. of carbohydrate equals 20.9 multiplied by 4.1, or 85.69 calories.

The total number of calories for 100 gm. of potato equals 96.87.

From these values for 100 gm., one then figures the values for whatever amount is to be ordered.

Any system in which these multiplications and additions are already made out is very helpful. Moreover, if the values are figured in multiples, one gets directly the number of grams of protein, fat and carbohydrate and the total fuel value for 10, 20, 30, 40 or more grams of the food, as may be desired.

Ordinary index cards may be used, arranged as shown in the accompanying tabulation.

In using the card system one, of course, copies the values for the various foods in the amounts desired. Additions are then made to get the totals for the day.

INDEX CARD SHOWING THE VALUES FOR ORANGE IN MULTIPLES OF TEN

Gm. Orange	P.	F.	C. H.	Cal.
10	.08	.02	1.16	5.27
20	.16	.04	2.32	10.54
30	.24	.06	3.48	15.81
40	.32	.08	4.64	21.08
50	.40	.10	5.80	26.35
60	.48	.12	6.96	31.62
70	.56	.14	8.12	36.89
80	.64	.16	9.28	42.16
90	.72	.18	10.44	47.43
100	.80	.20	11.60	52.70
110	.88	.22	12.76	57.97
120	.96	.24	13.92	63.24
130	1.04	.26	15.08	68.51

The desire to avoid this copying of figures leads one to search for a device offering this further convenience. The following serves that purpose:

Small, narrow booklets are made, as illustrated herewith. For example, one can open the bacon booklet at 10, 20 or more grams as may be desired. The egg booklet may be opened at one or two eggs. The number of grams of protein, fat and carbohydrate and the caloric value are at hand. No copying is necessary, as the booklets may be placed one below the other, the foods desired for the day being chosen from the stock of booklets. Once the diet is thus arranged, additions are made to find if the totals for the day are satisfactory. If such is not the case, more or less of a given food may be substituted by turning the leaves of the particular booklet to the corrected quantity.

These booklets were made by typing from the original card index system. The tabulating key was useful to keep spacing uniform. A photograph trimmer was used to cut the typewritten sheets into narrow strips. Binding was done by the use of punch and brass eyelets. Adhesive plaster is useful to reinforce the binding.

In actual use in the laboratory, it has been found convenient to hold the booklets in position by the use of thumb tacks stuck through the eyelets, an ordinary kitchen table being used for thus laying out the menu.

The time required for computing diets by this record system is relatively small. It likewise diminishes the chance of arithmetical error.

WATER ABSORBING CAPACITY OF DUSTING POWDERS*

TORALD SOLLMANN, M.D., CLEVELAND

The value of dusting powders is determined partly by their capacity for absorbing or retaining excessive fluid, for example, from the skin, from open wounds, from the intestine in dysentery, etc.

RELATIVE WATER CAPACITY OF DUSTING POWDERS, ARRANGED IN ORDER OF EFFECTIVENESS

Powder Tested	Weight of Water Held by 3 Gm. of Powder	Retained Water as Per Cent. of the Powder
Starch (corn)	2.39	80
Kaolin	2.19	73
Fullers' earth	2.09	70
Precipitated calcium carbonate	1.94	65
Talcum	1.84	61
Prepared chalk	1.59	53

1. The Chemical Composition of American Food Materials, Bull. 28, U. S. Dept. Agr.

* From the Pharmacological Laboratory of the Western Reserve University School of Medicine.

These uses suggested the desirability of ascertaining the relative water absorbing capacity of these dusting powders. This was done by shaking 3 gm. of the powders with an excess of water, throwing on a filter and permitting to drain quite thoroughly, and then weighing the moist powders. All experiments were made at the same time, so as to make the results comparable. They are shown in the accompanying table.

CONCLUSIONS

The commonly used dusting powders do not differ very materially in their capacity for holding water. However, starch, kaolin and fullers' earth are more effective than chalk or talcum.

NEW ARM BOARD*

VERNON C. DAVID, M.D. (CHICAGO)
Major, M. C., U. S. Army
LIMOGES, FRANCE

One of the most useful improvisations made in the splint room of U. S. Army Base Hospital 13 was an arm board

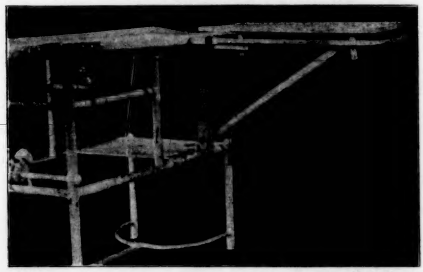


Fig. 1.—Arm board attached to operating table: *A*, groove fitting edge of table; *B*, beveled edge of a fixed semicircular board around which the arm board rotates; *C*, ball and socket joint allowing rotation of support of the arm board; *D*, sliding catch to attach apparatus to operating table.

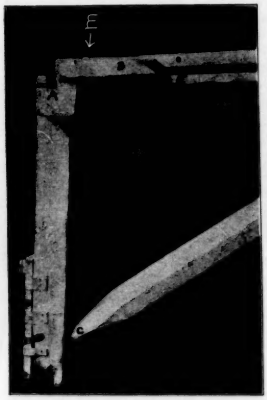


Fig. 2.—Details of arm board.

designed by Private Harold E. Poff, who, prior to his entrance into Base Hospital 13 as a patient, had never been inside of an operating room. This arm board has numerous advantages over an arm board that must be placed under the patient and which has a limited degree of adjustability.

The accompanying illustrations show the apparatus as made by Private Poff out of such simple materials as were at hand. It is the purpose to submit the design drawn by Private Joseph Conklin to an instrument maker on our return to the United States and have a board made of aluminum embodying a few improvements which have suggested themselves.

The advantages of this arm board to us have been: (1) its rapid application to or removal from any standard operating room table without moving the patient; (2) a free arc of rotation in the horizontal plane, making the apparatus suitable for either arm and enabling the operator to easily change the degree of abduction of the arm, and (3) the adjustability of the arm in the vertical plane, making it possible to change the degree of flexion of the arm.

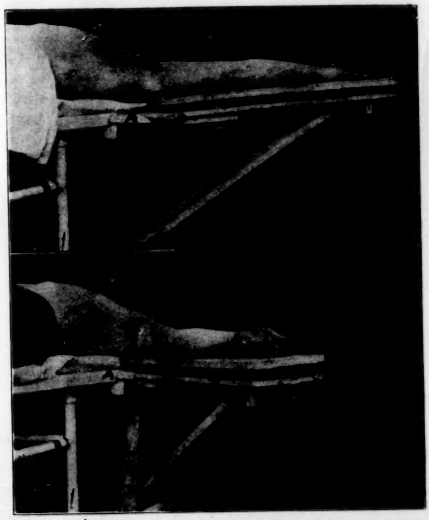


Fig. 3.—Different positions of arm board in a horizontal plane around the semicircle at *A*.

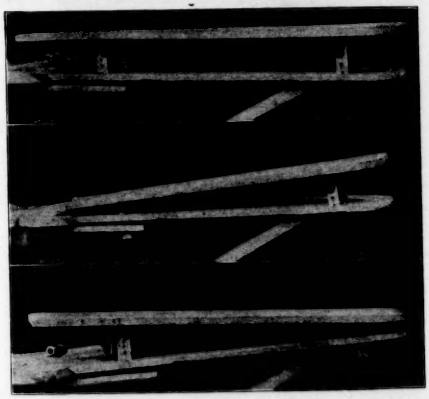


Fig. 4.—Superimposed movable board in various positions in the vertical plane: *A*, *B*, perforated supports which run through slots in the arm board.

The arm board is attached to the operating table by means of a groove at each end of an upright. The upper groove (Figs. 1 and 2 *A*) fits under the vertical edge of the table, and the lower groove (Figs. 1 and 2 *B*) over the rod running beneath the table, where it is held by a movable catch.

The horizontal rotation of the board is made possible by the rotation of the board around a fixed semicircle of wood, the circumference of which is beveled at the expense of its

*From Base Hospital No. 13.

upper surface (Figs. 1 and 2 *B*). The part of the arm board in contact with the semicircle is also beveled at the expense of its under surface. The stationary semicircular piece and the movable arm board are held together at this beveled joint by a small board beneath the arm board, which is attached to the arm board and to a screw in the center of the fixed semicircular piece (Fig. 2 *E*).

The arm board is supported by a board running from the upright attached to the operating table to the outer end of the arm board. In order to allow rotation of this piece, a ball and socket joint is provided at its junction with the upright attached to the operating table (Figs. 1 and 2 *C*).

To allow a change of position of the patient's arm in the vertical plane, a superimposed board, the same size as the arm board and supported by four legs, is employed. These supports run through slots in the arm board proper; and by means of pegs inserted in holes in the supports, the outer or inner end or both ends of the superimposed board may be raised. This superimposed board may be removed entirely, but we have found it to have definite advantages in obtaining stability of the patient's arm.

The degree of adjustability of the board in the horizontal plane, increasing the abduction or adduction of the arm, is shown in the accompanying illustrations. In the illustrations the foreshortening lessens the apparent degree of rotation, which may be seen by noting the change in the patient's axillary fold.

A CASE OF CONGENITAL MALFORMATION OF THE LEFT FOREARM WITH ABSENCE OF THE HAND

J. J. KURLANDER, M.D., CLEVELAND

B. C., a boy, aged 9 years, is healthy and normal in all respects except for the left upper extremity, which at first sight resembles very closely an intra-uterine amputation

Fig. 1.—Congenital malformation of forearm, lateral view.

Fig. 2.—Congenital malformation of forearm, anteroposterior view.

through the upper third of the forearm. The humerus is normal in size and function. There is normal range of motion at the elbow. The radius and ulna are palpable, and at their distal end is a small piece of bone, to which is attached a flexor and an extensor tendon. This small bone, evidently a rudimentary metacarpal bone, can be very easily flexed and extended. The stump is well shaped and padded.

The roengenograms show that the condition is not an intra-uterine amputation, since both the radius and the ulna are practically perfectly formed, being only half or one third the normal length. There is complete absence of carpal and metacarpal bones, with the exception of the single rudimentary metacarpal bone, and absence of phalanges. When the boy becomes older, an artificial arm will be ordered.

630 Osborn Building.

HERNIA OF THE ENTIRE STOMACH, RESULTING FROM STAB WOUNDS, SUCCESSFULLY REDUCED WITH RECOVERY

CARLOS C. BOOTH, M.D., YOUNGSTOWN, OHIO
Surgeon, Youngstown Hospital

During my recent term of service, I was called at 4 a. m., Oct. 1, 1918, to see J. L., aged 41, a laborer, who had just been brought into the hospital. He had a projecting tumor immediately over the region of the stomach covered only by clothing. On inquiry, I learned that he had been in a drunken brawl the night before, and on his way home had become involved in a fight with his companion, who stabbed him in the region of the stomach, and that he had fallen to the ground and had remained there until about 3 a. m., when he was found by passers-by who sent him to the hospital.

Hernia of entire stomach resulting from stab wounds.

On examination this tumor proved to be the stomach protruding through the wound. It was nearly perfectly round, dark red, and measured about 10 inches in diameter and was strangulated. A photograph was taken at once by artificial light, after which I had the patient etherized and the tumor elevated as much as possible and turned from one side to the other. The skin was painted with a 5 per cent. solution of iodin beneath the tumor to the edges of the wound, after which the tumor was thoroughly cleansed with saline solution. The lower edge of the stab wound was enlarged. I found that the tumor consisted simply of the entire stomach, and that the stab wound was 1½ inches long diagonally and just beneath the ensiform cartilage, the wound severing the rectus muscle on both sides of the median line. The stomach was gradually reduced into the abdomen, the wound was cleansed with iodin, and the wound layers were sutured, the wound being entirely closed.

The patient made an uneventful recovery with the exception of a stitch abscess which caused some delay in the healing of the wound. He was discharged about November 1, well.

The little white marks seen on the tumor are due to the movements of the tumor during respiratory movement while the photograph was being taken.

Code of Lighting for Industrial Plants.—*Public Health Reports*, Jan. 24, 1919, contains the report of the divisional committee on lighting, section on sanitation, committee on welfare work of the committee on labor, advisory commission, Council of National Defense. It includes a set of rules officially approved by the Illuminating Engineering Society which have been tried out for several years under working conditions in factories, mills and other work places, and which constitutes the basis of the Pennsylvania factory lighting code and that of New Jersey, which went into effect in both states during 1916. The effects of good light in factories are thus set forth in the reports: reduction of accidents; greater accuracy in workmanship; decreased spoilage of product; increased production for the same labor cost; less eye strain; better working and living conditions; greater contentment of the workmen; better order, cleanliness, and neatness in the plant; easier supervision of the men. The article is illustrated, and is an important contribution to the subject of proper light in industrial plants.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

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SATURDAY, MARCH 29, 1919

THE SUPRARENAL STRUCTURES CONSIDERED FROM NEW POINTS OF VIEW

With the resumption of research activities in the various fields of medical science which were interrupted by the war, the present may be an appropriate time to discard some of the outgrown conceptions that have been handed down in traditional fashion from decade to decade. Acquired hypotheses are always liable to become inherited prejudices which may hamper the progress of science if they are not rigorously subjected now and then to severe critical examination. The current teachings regarding the function of the suprarenal bodies furnish an illustrative case. The brilliant discovery of epinephrin in the suprarenal medulla—a substance capable of affecting blood pressure most profoundly when it is introduced into the blood stream—soon led to the statement that the normal tone of the sympathetic nervous system, particularly as exemplified in its effect on blood pressure, is maintained by an internal secretion from the suprarenals. This conclusion seemed to be fortified by the unquestioned fact that removal of the suprarenal organs is incompatible with the continuance of life. There is an accumulation of experimental evidence, however, some of which has been referred to in the past in THE JOURNAL, to indicate conclusively that the normal blood pressure is independent of the suprarenal secretion. A competent reviewer recently concluded that it is indeed doubtful whether under normal conditions a sufficient amount of epinephrin is discharged into the blood of the vena cava to affect appreciably the tone of the blood vessels, and this conclusion seems all the more justified because of the fact that small quantities of epinephrin have a dilating rather than a constricting influence, at least on certain vessels.[1]

There has been a naturally following temptation on the part of clinical observers to ascribe conditions exhibiting high blood pressure, as in arteriosclerosis and certain types of nephritis, to an increase of epinephrin in the blood. The expression "suprarenalemia" has thus attained a limited vogue. The extensive investigations of Stewart and collaborators at the Western Reserve University School of Medicine in Cleveland have, however, tended to render unlikely the explanation of high pressure on the basis of a suprarenal factor. Thus another suprarenal hope has been frustrated. We have also referred in the past to the apparent collapse of the theories so vigorously championed by Cannon with respect to the dependence of reactions to fear and other emotional states on hypersecretion of epinephrin into the blood.[2] So long as it is unproved that the suprarenal secretion can be made to discharge in abnormal amounts through experimental means, it seems hasty to assume a suprarenalemia in conditions of disease or of physiologic emergency.

The negation of so much that has followed the finding of epinephrin, and the appreciation of its pharmacologic potency, need not bring discouragement regarding the discovery of functions for the indispensable suprarenal structures. It is not generally understood by physicians who learned their anatomy in years gone by that what is called the suprarenal body represents the anatomic association of two components, each of which is derived from a separate and independent system. The suprarenal proper, or "cortex," is part of the "cortical" or "interrenal" system. The medulla is simply an accumulation of chromophil cells of the same nature histologically, chemically and pharmacodynamically, as similar masses of cells in other parts of the body. There is no clear evidence that these two systems are functionally related.

At the present time it may be profitable to turn the preponderance of attention away from the medullary part of the suprarenals, on which interest has so long been centered, and to institute inquiries regarding the cortex of the structures. In fact, there is not a little evidence that it is the cortex and not the medulla that is essential to life. Wheeler and Vincent[3] rightly assert that the older extirpation experiments on mammals did not definitely determine the question as to which constituent of the suprarenal body is essential to life, or whether, indeed, it is to the suppression of the compound organ in its entirety that we must attribute death after extirpation. They have furnished instances in which animals have survived, without symptoms, the destruction of the whole or practically the whole of the suprarenal medulla.

Experimental and clinical evidence are combining to indicate that the suprarenal cortex is associated in its functions in some way with the development of the sexual organs. Vincent[4] has reviewed the indications

1. Macleod, J. J. R.: Physiology and Biochemistry in Modern Medicine, St. Louis, 1918, p. 745. Compare also Austmann, K. J.; Halliday, C. W., and Vincent S.: On the Relations of the Adrenal Medulla to the Normal Blood-Pressure in Animals, Tr. Royal Soc. Canada **11**: 123, 1917.

2. Newer Views of the Functions of the Adrenals, editorial, J. A. M. A. **63**: 322 (July 25) 1914.

3. Wheeler, T. D., and Vincent, S.: The Question as to the Relative Importance to Life of Cortex and Medulla of the Adrenal Bodies, Tr. Royal Soc. Canada, **11**: 125, 1917.

4. Vincent, S.: The Experimental and Clinical Evidence as to the Influence Exerted by the Adrenal Bodies upon the Genital System, Surg., Gynec. & Obst. **25**: 294 (Sept.) 1917.

that when cortical tumors occur in the female, an accentuation of male secondary sexual characteristics develops, and simultaneously a hypoplastic condition of the internal generative organs supervenes. Additional evidences as to a connection between the suprarenal cortex and the sexual organs is furnished by the enlargement of the cortex during breeding and pregnancy. Feeding young animals with suprarenal gland substance seems to stimulate the growth of the testes. The present seems to be an appropriate moment to shift, for a time at least, the direction of interest away from the older beliefs, and to attempt to make new discoveries from new angles of attention.

CHILD WELFARE AND DISEASE UNDER WAR-TIME FOOD CONDITIONS IN CENTRAL EUROPE

Reports which are beginning to reach us from central Europe bring confirmation in new ways of the seriousness of the food situation that has confronted the belligerent nations there in the past two or three years. Although an unusually large incidence of epidemics may be interpreted as representing the consequence of widespread malnutrition which offers more ready entrance to the invasion of infections, such a conclusion is by no means the inevitable one. Thus, the outbreak of influenza in many parts of the world can scarcely be adduced as proof of the existence of inadequate food supplies where the malady occurs. But, on the other hand, whenever deficiency diseases come into unusual prominence it may be taken as almost axiomatic that food conditions are somehow disturbed. The accounts of the appearance of "war edema" have focused attention on dietary difficulties referable to war-time conditions. And more recently the descriptions of an unexpected prevalence of infantile scorbutus[1] accentuate the long suspected seriousness of the food situation in the defeated countries.

Even the European pediatricians have at length accepted the inclusion of infantile scurvy in the category of nutritive disorders of the deficiency type. The failure to identify Barlow's disease with what is termed scorbutus in this country appears to be accounted for in large degree by the comparative infrequency of well defined cases. Writing from von Pirquet's clinic for children in Vienna, Tobler remarks that scorbutus has heretofore played only an insignificant part in the pathology of childhood within the ages from 2 to 15. In Gerhardt's "Handbuch für Kinderheilkunde," published in 1878, scurvy in childhood was stated to have practically disappeared. Today, however, it is possible to find reports of literally hundreds of cases of the disease. It is not confined to unhygienic surroundings where "bad air," lack of sunlight, humidity and other once supposedly formidable dangers lurk. Even in the children's homes attached to the great universities of Europe, scorbutus has made its appearance. Underfeeding is not a prime factor, if, indeed, it is a contributory one. Tobler reports that out of sixteen children living at one time in the presumably excellent environment of the solarium of the children's clinic in Vienna, twelve developed scurvy. Hence he dismissed lack of care or unsalubrious climate as an etiologic factor, and refers the genesis of the disease to the protracted exclusive use of foods which have been subjected to certain chemical and physical processes incident to their preparation for the diet. We are told that in the winter of 1917-1918, fresh vegetables and potatoes were no longer available for the children. In one institution only 16 liters of milk were procurable for a personnel of about 500. In 200 carefully studied cases of scurvy, Tobler identified the incidence of the disease with the lack of foods which had not been altered in some way by heat. This corresponds with the numerous reports of the destruction of the antiscorbutic potency of natural foods by heat, as has been pointed out frequently of late in THE JOURNAL.[2]

Reports from Prague are also distressing.[3] The statistics of the average daily gains in weight of children of a certain group in one of the orphanages verify this. From 1913 to 1917 the figure, in grams per day, decreased thus each year: 20.6, 20.5, 17.2, 14.1 and 10.8. The mortality increased from 4 per cent. in 1913 to 15 per cent. in 1917. Various factors have contributed to this unfortunate outcome. Owing to the conditions for which the war was responsible, breast feeding was no longer possible to the same extent as formerly. The nursing women were nourished less well than in the times preceding the war. The failure to secure foster mothers was coincident with an enforced decrease in the supply of cow's milk. The quality of the latter has steadily decreased; and such useful by-products of the milk industry as buttermilk are not available at all.

It is not surprising if, under such trying circumstances, infantile scurvy has conspicuously joined the ranks of other diseases associated with nutrition. Epstein, of the children's clinic in Prague, has given an account of the difficulties confronting therapeutic efforts. The much desired "raw" milk was often of doubtful "rawness," as the high price of milk had taught dairymen to prevent by heat sterilization the loss of even the slightest portion. Oranges, long recommended by English and American pediatricians as antiscorbutics, disappeared from the markets early in the war. Other fruits and even most green vegetables were difficult to obtain and were usually so expensive as to make them almost prohibitive among certain

1. Tobler, W.: Das Skorbut im Kindesalter, Ztschr. f. Kinderh. **18**: 63, 1918. Epstein, A.: Ueber eine auffällige Häufung der Barlow'schen Krankheit in den Kriegsjahren 1917-1918, Jahrb. f. Kinderh. **88**: 237, 1918.

2. Further Facts Regarding Antiscorbutics, editorial, J. A. M. A. **72**: 728 (March 8) 1919.

3. Pollak, L.: Ueber das Verhalten der Säuglinge in den Kriegsjahren, Wien. med. Wchnschr., No. 23, 1918.

groups of the population. Hence we can understand the earnest appeal of the pediatricians of the afflicted territories for the speedy renewal of the milk supply and their protest against the production of high-priced butter at the expense of infant welfare. In an almost frantic appeal for relief from the impending disaster to European childhood, Epstein has called for action instead of words on the part of the authorities responsible for the public health. We may do well to understand the true import of such warnings so that the nutritive welfare of our own child population shall never be knowingly neglected.

ACUTE INFECTIOUS POLYNEURITIS—A NEW DISEASE

During the war there was observed among British troops a form of polyneuritis of a peculiar character which has been studied with noteworthy results by Bradford, Bashford and Wilson.[1] The clinical manifestations were studied by Bradford in thirty cases.[2] Usually there was first a mild general febrile illness before paralysis appeared, but occasionally paralysis was the first symptom observed. As the primary illness was mild, the symptoms being fever, headache, pain in the back, perhaps vomiting, and sometimes sore throat, no importance as a rule was ascribed to it; at times, however, the condition seemed serious enough to suggest perhaps the possibility of epidemic meningitis. Usually the patient appeared to recover fully in a few days, and then there ensued a variable period of latency, in one case as long as five weeks, before the paralysis which seems to be peculiar to the disease came on. During this interval some of the patients felt well enough for severe physical exertion without distress.

The main characteristics of the paralytic stage were sudden, widespread paralysis, especially, but not exclusively, of the large muscles of the proximal segments of the limbs and trunk; the face also was almost always involved, and generally on both sides; individual muscles or groups of muscles were not picked out, the limbs and trunk being affected as a whole. Though symmetrical, the palsy, which was progressive and sometimes distinctly ascending, was not always equal on the two sides. Atrophy and contractures did not develop. Usually the paralysis was accompanied with pain, numbness, tingling, and relative rather than absolute sensory loss. In declared cases there was loss of tendon reflexes; the sphincters were not profoundly involved. A striking feature was the rapidity with which urgent symptoms and even death came on in patients who seemed to be doing well. In this series of thirty cases death occurred in eight, sometimes rather suddenly, and in all except in one case before the eleventh day of the palsy. In the patients that recovered, the paralysis, first progressive, became stationary and then it would begin slowly to improve.

The results of the work by Bashford on the transmission of the disease to monkeys, and by Wilson on the virus, are remarkable indeed. The main features of the disease were reproduced in monkeys by the subdural injections of suspensions of the spinal cord of three cases after preservation in 50 per cent. glycerol for from twenty-five days to seven months; also by inoculation of cord material from monkey to monkey, and moreover by injection of pure cultures of an organism isolated from the central nervous system. The experimental disease developed after an incubation period of from five to six weeks, but without any recognized and definite preliminary febrile stage, the main symptoms being weakness and paralysis of the limbs, apparently tending to recovery. In anaerobic tissue cultures of nervous tissues from fatal cases and from monkeys, immersed in 50 per cent. glycerol for some days to rid them of gross bacterial contaminations, Wilson obtained growths of a minute, pleomorphic organism, which was difficult to stain and which died out after a few subcultures. Apparently the organism was widely distributed in the nervous system because it rarely happened that a culture failed to give specific growths. If confirmed by subsequent investigators, these results will be highly creditable because of the great difficulties and the many chances of error that attend practically every step in the cultural technic employed in this work.

As regards the gross and microscopic changes in the nervous system, suffice it to say that meningeal congestion, edema, and minute hemorrhages and apparent inequalities in the gray matter of either side of the cord were noted, and that the evidences of acute neuritis and of degeneration of nerve cells with more or less diffuse cellular infiltration in the central nervous system were so definite as to lead the authors to conclude that it concerned a diffuse affection of the nervous system involving the cord, the spinal ganglions and the peripheral nerves, with, however, "but slight incidence on the cortex." The lesions in the central nervous system seem to have been more diffuse than in epidemic poliomyelitis; intense focal changes in the anterior horns, like those seen in the latter disease, seem not to have been observed.

Whatever the final outcome of etiologic and anatomic investigations, there seems little doubt that the English observers have pointed out the existence of a hitherto practically unrecognized disease. The new disease differs from ordinary neuritis in many respects, notably the constant bilateral paralysis of the face, trunk, and proximal segments of the limbs, progressive and at times at least ascending, with involvement of the central nervous system. It would seem to be distinct from epidemic poliomyelitis because there is no muscular atrophy or tendency to contracture, and

1. Bradford, J. R.; Bashford, E. E., and Wilson, J. A: Acute Infective Polyneuritis, Quart. Jour. Med. **12**: 88, 1919.
2. Gordon Holmes (Brit. M. J. **2**: 37 [July 14] 1917) is said to have described similar cases.

because the lesions are not identical. Bradford suggests that the virus of the new disease may be a member of the same class as that of epidemic poliomyelitis; possibly epidemic or lethargic encephalitis (nona) is caused by allied organisms. Here are many problems for future work. In the meantime, physicians should bear in mind the probability that there are distinct infectious diseases of the nervous system which may be escaping detection because of a general similarity in their clinical manifestations to established entities.

Current Comment

HOSPITAL STANDARDIZATION

The first and most important function of a hospital is to care for the sick and the injured. Many hospitals, however, are engaged in the training of interns and nurses; some are closely related to medical education and some, through research, are adding largely to the world's knowledge in regard to the etiology, diagnosis and treatment of diseases. In recent years also many hospitals have taken on an additional function by having social service workers follow up the patients after they leave the hospital. Where formerly they were merely institutions to care for the sick persons who could not be cared for at their homes, hospitals have now become social institutions, with broadened functions and having a much more intimate relationship with the public in the communities which they serve. In recent years this relationship has increased the general interest in hospitals as public institutions and has pointed to the necessity and importance of their being investigated and regulated—which means standardized. In this connection, the article on hospital standardization by the president of the American Hospital Association, will be of particular interest.[1] In this paper Dr. Warner emphasizes the many and varied interests now centering in the hospital and the equally varied and numerous functions being performed by them. In any efforts toward standardization, therefore, all these interests and functions must be given careful consideration. Not the least factor in the conduct and efficiency of the hospital is the administration, and in this respect hospitals are not unlike hotels with their complex problems of management. In the standardization of hospitals also, the further improvement of both undergraduate and graduate medical education, as well as the function of training interns, and of course nurses also, must be kept in view. The number of hospitals, however, is increasing so rapidly that it will be impossible to supply more than a portion with interns. This brings to the hospital the additional function of training expert technicians and hospital assistants who can perform many of the duties now devolving on interns. The task of standardizing hospitals is a large one, and the many interests involved must work together to establish that standard which will make it possible for these institutions to render the greatest service to the people in the communities in which they are located.

1. Warner, A. R.: Hospital Standardization, this issue, p. 914.

THE END OF A LONG STRUGGLE IN SIGHT

The passage of the public health law in New Mexico, on which we commented last week,[1] marks the beginning of the end of a long campaign for uniform state legislation on vital statistics. Efforts to secure adequate vital statistics legislation were begun almost immediately after the organization of the American Medical Association in 1847. Yet in 1906 there was no birth registration worth mentioning, while only ten states had any death registration. In 1907, the so-called model bill was drafted, through the united efforts of the federal Bureau of the Census, the Committee on Legislation of the American Medical Association, and the Committee on Vital Statistics of the American Public Health Association. Numerous professional and social organizations endorsed the measure, and the work of securing its adoption in the different states was taken up systematically and carried on from year to year. Quietly but steadily this movement has gone on, with the result that the passage of the law in New Mexico leaves Arizona and Nevada as the only states without provisions for birth and death registration. Forty-one states have now adopted satisfactory laws. In Delaware, South Dakota, Iowa, West Virginia and Alabama, the laws are not satisfactory for several reasons, the chief difficulty arising from adherence to the obsolete and ineffective method of registering deaths through county clerks rather than through local registrars under the control of a state registrar. These inconsistencies will without doubt be corrected in the near future. In fact, bills are at present before the legislatures of Alabama and West Virginia for the reorganization of their vital statistics methods. The Arizona legislature meets in November of the present year, when it is hoped that the model bill will become a law. This would leave only Nevada to adopt the law at the next session of her legislature. If the physicians and the public spirited citizens of Arizona will interest themselves in this matter, there will be no difficulty in adding Arizona to the list of states enjoying modern and effective birth and death registration.

STANDARDIZATION OF DEGREES IN PUBLIC HEALTH

In our correspondence column this week appears a report regarding an effort to standardize degrees in public health. This is an important and timely subject not only in its relation to courses in public health but also in its bearing on degrees for other creditable graduate work. An individual who has creditably pursued a definite course of graduate instruction deserves to have a suitable degree. At the same time a multiplicity of degrees should be avoided. The report referred to suggests the degree of Doctor of Public Health (Dr.P.H.) for graduates in medicine after two years of work, of which at least one has been in residence. This is a wise suggestion which might well be adopted by all universities giving degrees in public health. Three years ago there were seven institutions

1. Modern Health Organization in New Mexico, Current Comment, J. A. M. A. 72: 868 (March 22) 1919.

which reported courses leading to the degree of Doctor of Public Health, and only three[1] required the two year course, while the others[2] required a one year course. One other institution, the University of California, granted the degree of Graduate in Public Health (Gr.P.H.) on completion of a two year course. To avoid confusion, one degree must be awarded for work of similar character; and to give the degree a real value, it must represent a definite amount of work. It is encouraging also to note that for a three year graduate course, for students holding the bachelor degree from a college or technical school, the report suggests either the degree of doctor of philosophy (Ph.D.) or of Doctor of Science (Sc.D.). The former degree is seldom granted as an honorary title while on the contrary the latter degree is honorary in the majority of instances. It would appear, therefore, that the doctor of philosophy (Ph.D.) degree is preferable. As to whether the character of the work done should be designated by such phrases as "in Public Health and Hygiene," there appear to be differences of opinion. So long as a degree used represents a definite amount of creditable graduate work, it would not seem necessary to add a lot of supernumerary letters to indicate the particular kind of work done.

1. These are the Schools of Public Health of the Universities of Colorado, Michigan and Wisconsin.
2. These are the Schools of Public Health of Harvard, Tulane, University and Bellevue, and the University of Pennsylvania.

INCREASED HARRISON LAW TAX UNJUST TO PHYSICIANS

While the Harrison law for the control of narcotic drugs was passed ostensibly for the purpose of raising revenue, it is in reality a public health measure. The revenue feature is only a legal subterfuge, as it was only by imposing a tax that Congress could exercise any jurisdiction on the question. The tax, therefore, being merely a pretext, should be a minimum and purely nominal one. Originally, the law required physicians who desire to prescribe the drugs covered by the act to pay an annual registration fee of one dollar. There are approximately 150,000 physicians in the United States. The law, therefore, imposed a tax of $150,000 on the medical profession for the protection of the public. This tax physicians cheerfully paid, accepting this small burden for the sake of the public benefits to be derived from the measure. However, at the last session, Congress, in the revenue law, increased the fees for registration under the Harrison law. The license fee for physicians was increased to three dollars. This means that physicians in the United States will be required during the next year to contribute nearly half a million dollars, purely for the public good and not in any sense for the benefit of the profession. The Harrison law is of no special benefit to physicians. THE JOURNAL, the American Medical Association and the American medical profession enthusiastically supported the Harrison bill when it was before Congress. The great majority of the profession have cooperated to the extent of their ability to promote the enforcement of the law. The nominal tax of one dollar was accepted by physicians as necessary to validate the measure. But there is not the slightest excuse, either legal or social, for increasing this fee to three dollars. If the expenses of administering the law are greater than the revenue derived from it, sufficient appropriation should be made out of the public money derived from general taxation. The law is for the benefit of the public, and the public should pay for it. It is, of course, too late to secure any change in the situation for the present year, but the law should be amended at the first opportunity by restoring the nominal tax of one dollar. If our state and county societies will bring this situation to the attention of their congressmen and will demand the amendment of the present law, speedy correction of the injustice done the profession will be possible.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending March 21, the Medical Corps contained 20,243 officers, a decrease of 437 from the previous week. The Medical Reserve Corps contained 1,198 officers. The total number of medical officers discharged since the beginning of the war is 13,279.

Air Service Division of the Office of the Surgeon-General Discontinued

The Surgeon-General's Office announces that the Air Service Division of that office, which was established for the purpose of handling medical problems connected with the aviation service, has been discontinued. The business of that division will be taken over by the air service under the jurisdiction of its chief surgeon.

Officers Appointed in Medical Corps of Navy

One hundred and forty-eight temporary and reserve officers have been appointed in the regular Medical Corps of the Navy as a result of recent examinations. These officers have served during the war in a temporary capacity. Thirty-eight were temporary officers and the remainder members of the reserve corps.

Promotion in Army Medical Corps

The provisions of section 10 of the national defense act relative to promotions in the Army Medical Corps, suspended by the act of Oct. 6, 1917, were again made operative from December 10. All officers who had completed one year's service prior to December 10 have been promoted. However, since the suspension of the act of October 6, which removed for the period of the war the requirements that lieutenants in the Medical Corps shall serve five years before being entitled to a captaincy, no service except that rendered under a permanent commission counts toward promotion.

General Pershing Thanks the Medical Corps

Following is the copy of a letter dated Feb. 20, 1919, from the commander-in-chief of the American Expeditionary Forces to Col. Walter D. McCaw, M. C., chief surgeon, A. E. F.:

My dear Colonel McCaw:

Now that active operations are at an end, and many officers and enlisted personnel are preparing to sever their connection with the military forces and return to civil life, I desire to express my personal appreciation and thanks and that of your fellow members of the American Expeditionary Forces to you, and through you to the members of your Department, for the splendid services they have rendered.

At the front and in the long chain of hospitals extending down to the Base Ports, I have watched the fine and unselfish character of their work, and the achievements which have added new glory to the noble professions they have so ably represented. Many of them have shared with the line troops the hardships of campaign conditions and have sustained casualties and privations with fortitude that is beyond praise. No labor has been too exhausting and no danger too great to prevent their full discharge of duty.

A special word of thanks is due to those members who were attached to and served continuously with the armies of our Allies. Their efficiency and high ideals have called for the highest praise of the Allied Governments under whom they have served.

Before they leave France, will you convey to all ranks under your command the deep sense of my personal appreciation of their splendid services and my regret at the impracticability of sending each and every one of them a letter of thanks?

Sincerely yours,
JOHN J. PERSHING.

Wax Models of War Wounds

An important work now being carried on by the Medical Department of the Army is the preparation of various lesions of the skin in wax showing the nature of wounds and diseases during the late war. Wax reproductions are being made in the Army Medical Museum by an expert of the following types of cases: chronic or unhealed ulcers following various types of wounds; unhealed lesions resulting from gas burns; unusual scar formations, and unusual skin diseases. It is the intention of the Medical Department of the Army to order patients in especially interesting cases of this character to the Walter Reed Hospital for further treatment and for the production of the models, which will be a permanent exhibit in the Army Medical Museum.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Birmingham—Edmondson, J. H. (C.)
Marion—Swann, E. (C.)
Mobile—Inge, F. M. (C.)
Muscle Shoals — Lister, R. H. (L.)

ARIZONA

Bisbee—Richstein, E. J. (C.)

ARKANSAS

Hot Springs—Wilkins, J. S. (C.)
Texarkana—Read, W. K. (M.)

CALIFORNIA

Martinez—Fitzpatrick, E. B. (L.)
San Francisco—Allen, F. E. (M.)
Bunnell, S. (C.)

COLORADO

Colorado Springs—Brown, L. G. (L.)
Denver—Collins, E. W. (C.)

CONNECTICUT

Hartford—Jarvis, H. G. (L.)
Litchfield—Turkington, C. H. (C.)
Waterbury—Bevans, T. F. (C.)

DELAWARE

Wilmington—Draper, J. A. (C.)

GEORGIA

Ashburn—Harris, H. W. (C.)
Patterson—Davis, C. L. (L.)

ILLINOIS

Atlanta—Brock, G. W. (C.)
Bloomington—Gailey, W. W., Jr. (C.)
Champaign—Davis, C. S. (C.)
Chicago—Davies, R. H. (M.)
Goodkind, M. L. (M.)
Hurwitz, E. (L.)
Maclay, O. H. (C.)
Myers, J. (C.)
Newell, W. B. M. B. (L.)
Pitte, C. E. (L.)
Stearns, R. W. (L.)
Garden Prairie—Hartman, M. L. (L.)
Oak Park—Phelps, L. B. (C.)
Peoria—Caldwell, C. B. (C.)
Waukegan—Connell, J. A. (L.)

INDIANA

Fort Wayne—Hamilton, A. (M.)
Rensselaer—Washburn, I. M. (C.)
West Baden—Boyd, C. E. (L.)

IOWA

Cedar Rapids—Skinner, G. C. (C.)
Hawarden—McAllister, F. J. (M.)
Independence — Agnes, F. F. (C.)
Manilla—Draper, W. E. (M.)
Mason City—Dakin, C. E. (L.)

KANSAS

Arkansas City—Hahn, M. (M.)
Salina—Riddell, J. D. (M.)

KENTUCKY

Fordsville—Deweese, C. (M.)
Louisville—Beck, C. K. (L.)
Sunrise—Beckett, G. A. (L.)
Winchester—Doyle, G. F. (C.)

MAINE

Buckfield—Atwood, H. F. (L.)

MARYLAND

Baltimore—Cohen, L. (C.)

MASSACHUSETTS

Boston—Arnold, H. D. (L. C.)
Lawrence, C. H., Jr. (L.)
MacAusland, A. R. (C.)
Rockwell, L. H. (L.)
Cambridge—Lee, R. I. (L. C.)
Foxboro—Bunnell, G. L. (L.)
Lowell—Collins, W. M. (L.)
Nantucket—Lewis, F. E. (C.)
Worcester—Bigelow, E. B. (M.)

MICHIGAN

Algonac—Bostwick, W. E. (C.)
Boyne Falls—Conkle, G. C. (L.)
Detroit—Babcock, W. L. (Col.)
Shurly, B. R. (L. C.)
Grand Rapids—Wilson, W. E. (C.)
Iron Mountain—Anderson, W. J. (C.)
Northville—Henry, T. B. (M.)
Shaftsburgh — Dunham, W. H. (C.)

MINNESOTA

Balaton—Germo, C. (L.)
Minneapolis — Jones, R. N., Jr. (L.)
Morrison—Zimmerman, H. B. (C.)

MISSOURI

Charleston—Shelby, M. H. (L.)
Kansas City—McAlester, A. W., Jr. (M.)
Moberly—Fleming, T. S. (L.)
Rolla—Baysinger, S. L. (M.)
Springfield—Horst, O. C. (L.)
St. Louis—Clausen, S. W. (L.)
Dean, J. M. (C.)
Herchenroeder, L. C. (C.)

MONTANA

Great Falls — Woodward, F. A. (L.)

NEBRASKA

Nelson—Lemoine, A. N. B. (L.)

NEW JERSEY

Barnegat—Bunnell, F. N. (L.)
Jersey City—Rector, J. M. (M.)
Montclair—Ewing, H. M. (C.)
Newark—Fewsmith, J. L. (C.)

NEW YORK

Avon—Swan, C. G. (L.)
Brooklyn—Agris, H. (L.)
Knoll, L. F. (L.)
Miller, S. (C.)
Canandaigua — Burgess, H. C. (L.)
New York—Barclay, H. (L. C.)
Bookman, M. R. (L.)
Boyd, C. S. (L.)
Hammond, G. M. (M.)
James, H. (M.)
Jean, G. W. (M.)
Johnson, F. A. (C.)
Ladinski, L. J. (M.)
Rockwell, W. H. (M.)
Sager, M. A. (L.)
Williams, F. E. (M.)
Pleasantville—Wilcox, E. N. (C.)
Rushford—Hardy, H. K. (L.)
Saratoga Springs—Ledlie, J. B. (C.)
Syracuse—Lawless, A. T. (L.)

NORTH CAROLINA

Durham—Bitting, N. D. (C.)
Winston-Salem—Wyatt, W. (C.)

NORTH DAKOTA

Linton—Hogue, R. R. (C.)

OHIO

Cincinnati—Palmer, D. W. (C.)
Cleveland—Ingersoll, J. M. (M.)
Colton—Garwood, G. E. (C.)
Columbus—Fisher, H. H. (C.)
Williamstown—Tombaugh, A. A. (L.)

OKLAHOMA

El Reno—Catto, W. B. (L.)
Shawnee—Gallaher, W. M. (L.)

OREGON

Portland—Joyce, T. M. (M.)
MacKenzie, K. A. J. (C.)
Matson, R. W. (M.)
Petheram, C. G. (L.)

PENNSYLVANIA

Ashley—Frederick, D. F. (L.)
Chester—Campbell, E. A. (C.)
Rozploch, A. R. (L.)
Erie—Schlindwein, G. W. (C.)
Mercer—Richardson, W. W. (M.)
Philadelphia—Bernd, L. H. (M.)
Cooper, H. (C.)
Pittsburgh—Behan, R. J. (C.)
Davison, R. E. (M.)
Robinson, J. W. (C.)
Reading—Kistler, C. K. (L.)
Krick, G. W., Jr. (L.)
Roaring Springs — Hair, W. L. (L.)

SOUTH CAROLINA

Clarks Hill—Sharpton, B. T. (L.)
Rock Hill—Rakestraw, C. M. (C.)

TENNESSEE

Gallatin—Reese, H. (M.)
Kingsoprt—Edwards, C. P. (C.)
Memphis—Anderson, E. L. (L.)
Thompson, E. G. (C.)

TEXAS

Antelope—Hilburn, R. E. (L.)
El Paso—Grace, T. W. (L.)
Irvin, E. H. (C.)
San Antonio — Hargis, W. H. (M.)
Waco—Colgin, E. E. (L.)
Curran, W. F. (C.)

UTAH

Smithfield—Merrill, R. T. (M.)

VIRGINIA

National Soldiers Home—Jenkins, F. E. (M.)
Richmond—Weitzel, J. S. (L.)

WEST VIRGINIA

Sandfork—Corkrean, J. E. (L.)

WISCONSIN

Milwaukee—Merten, P. J. (L.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Crockett—Adams, J. H.
Los Angeles—Bowers, C. H.
Cowan, J. R.
Hutchinson, W. W.
Schwartz, J. L.
Patton—Parkin, V.
San Francisco—Harrison, W. H.
Leland, T. B. W.
Tupper, R. B.
Vallejo—Hare, W. B.

CONNECTICUT

New Haven—Coffey, J. R.

GEORGIA

Richland—Pickett, C. E.

ILLINOIS

Chicago—Brook, O.
Hillis, D. S.
Granville—Dysart, B. Q.
Park Ridge—Conley, T. E.

INDIANA

Gary—Ryan, L. K.

MASSACHUSETTS

Boston—Bailey, F. J.
Coffin, R. A.
New Bedford—Foster, E. E.
West Springfield—Corcoran, G. B.

MICHIGAN

Detroit—Drolshagen, E. A.
Ferris, R. G.

MINNESOTA

Minneapolis—Hall, W. W.
Kistler, A. J.

MISSOURI

Kansas City—Goodman, S.
Hall, E. P.
Holbrook, R. W.
Skinner, J. O.
St. Louis—Deppe, A. H.

NEW JERSEY

Montclair—Richardson, A. H.

NEW YORK

Brooklyn—Stattman, B.
New York—Kerley, J. H.
Vorhaus, M. G.

NORTH CAROLINA

Rocky Mount—Willis, B. C.

OHIO

Toledo—Daniells, R. P.

OKLAHOMA

Vinita—Johnson, H. L.

PENNSYLVANIA

Erie—Strimple, J. T.
Philadelphia—Knox, H. E.
Staub, J. S.
Thomas, B. A.

RHODE ISLAND

Providence—English, J. M. F.

TEXAS

Austin—Gilbert, G. H.
Granger—McLaughlin, R. L.
Shelbyville—Windham, L. B.

VIRGINIA

Centralia—Ragland, J. F.
Portsmouth—Nolan, F. F.
Richmond—Johns, F. S.
Salem—Darden, J. C.

WASHINGTON

Seattle—Hopkins, R. T.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Lee, Va., from Camp Dix, Lieut. J. G. SANDERS, Troy.
To Camp Pike, Ark., as commanding officer of the base hospital, from Camp Sheridan, Col. L. A. FULLER.
To Camp Travis, Texas, base hospital, from Camp Hancock, Capt. W. G. THIGPEN, Montgomery.

Arizona

To Fort Sheridan, Ill., from Denver, Capt. E. J. RICHSTEIN, Bisbee.

Arkansas

To Camp Pike, Ark., base hospital, from Camp McClellan, Lieut. W. K. GRAY, Little Rock; from Whipple Barracks, Capt. I. H. JEWELL, Paris.

To Denver, Colo., from Camp Pike, Capt. W. D. JUDKINS, Little Rock.

To Hoboken, N. J., from Camp Dix, Major B. V. POWELL, Camden.

To report to the commanding general, Southeastern Department, from Camp Joseph E. Johnston, Capt. E. E. POYNER, Green Forest.

California

To Fort Bayard, N. M., from Camp Fremont, Capt. A. B. McCONNELL, Fresno.

To Fort Douglas, Utah, from Camp Dix, Major A. D. S. McCOY, Pasadena; from Camp Fremont, Capt. T. M. CARTMELL, Los Angeles.

To Garden City, N. Y., from Washington, D. C., Lieut.-Col. H. W. HORN, San Francisco.

To San Francisco, Calif., from Camp Dix, Lieut.-Col. E. S. KILCORE, San Francisco. Letterman General Hospital, from Camp Fremont, Capts. L. P. ADAMS, T. REA, Oakland; Lieuts. J. L. MUDD, Merced; H. D. BARNARD, Sacramento; from Fort Riley, Lieut. R. L. CRUM, Los Angeles.

To Washington, D. C., from Newport News, Lieut.-Col. H. W. HORN, San Francisco.

Canal Zone

To Garden City, N. Y., from Camp Upton, Major E. P. BEVERLY, Balboa.

Colorado

To Biltmore, N. C., from Camp Grant, Capt. W. A. SEDWICK, Denver.

To Denver, Colo., from Cooperstown, N. Y., Lieut. J. B. SALBERG, Boulder.

The following orders have been revoked: *To Denver, Colo.*, from Camp Cody, Lieut. T. A. DAVIS, Portland. *To Washington, D. C.*, Surgeon-General's Office, from Hoboken, Major W. W. WILLIAMS, Denver.

Connecticut

To Chicago, Ill., Chicago University, for instruction, from New Haven, Major C. B. WOOD.

To Fort Oglethorpe, from Camp Meade, Lieut. H. E. STEWART, New Haven.

To Garden City, N. Y., from Vancouver Barracks, Major R. BLACKMORE, Hartford.

To Houston, Texas, Ellington Field, as flight surgeon, from Dallas, Capt. A. E. BRIDES, New Haven.

To Oteen, N. C., from Camp Hancock, Capt. C. O. PURINTON, West Hartford.

The following orders have been revoked: *To Camp Meade, Md.*, from Camp Polk, Lieut. E. K. DEVITT, Lyme. *To Fort Oglethorpe* for instruction, Lieut. E. J. S. SCOFIELD, Danbury.

Delaware

To Fort D. A. Russell, Wyo., as tuberculosis examiner, from New Haven, Capt. M. I. SAMUEL, Wilmington.

District of Columbia

To Newport News, Va., from Washington, D. C., Lieut.-Col. H. B. McINTYRE.

To Panama Canal Department, from Washington, D. C., Col. L. T. HESS.

To report to the commanding general, Eastern Department, from Camp A. A. Humphreys, Capt. H. W. BARKER, Washington.

To Walter Reed General Hospital, D. C., from Camp A. A. Humphreys, Capt. R. H. FORD, Washington; from Camp Hancock, Major W. R. BUCHANAN, Washington.

To Washington, D. C., Surgeon-General's Office, from Walter Reed General Hospital, Col. E. R. SCHREINER.

Florida

To Fort Reno, Okla., from Camp Sheridan, Capt. R. B. MacFEETERS, Jacksonville.

To Hoboken, N. J., from Camp Jackson, Capt. G. DAY, Jacksonville.

To Pittsburgh, Pa., from Camp Sheridan, Capt. M. E. HECK, St. Augustine.

To report to the commanding general, Southeastern Department, from Camp Joseph E. Johnston, Capt. J. M. IRWIN, Crystal River.

Georgia

To Camp Jackson, S. C., from Camp Wheeler, Major O. H. STANLEY.

To Camp Lee, Va., base hospital, from Walter Reed General Hospital, Capt. W. C. PUMPELLY, Macon.

To Camp Zachary Taylor, Ky., base hospital, from West Baden, Capt. T. H. STEWART, Atlanta.

To Fort McHenry, Md., from Camp Dix, Capt. J. C. McDOUGALL, Atlanta.

To Fort McPherson, Ga., from Camp Beauregard, Lieut. T. STARR, Calhoun.

To Fort Oglethorpe, from Southern Department, Capt. G. B. SMITH, Rome.

To Roland Park, Md., from Camp Logan, Lieut. C. L. EDGE, Columbus.

Illinois

To Camp Kelly, Texas, as flight surgeon, from Houston, Capt. H. E. MIZE, Chicago.

To Camp Lewis, Wash., from Eastview, Major R. M. RITCHEY, Elgin.

To Camp Pike, Ark., from Camp Sheridan, Lieut. G. C. CONLIN, Springfield.

To Camp Sherman, Ohio, base hospital, from Camp Dix, Capt. J. R. HARRY, Chicago.

To Camp Travis, Texas, from Camp Hancock, Lieut. J. M. McSPARIN, Stonefort; from Camp Logan, Capt. E. A. AISENSTADT, Chicago. Base hospital, from Camp Sheridan, Capt. D. N. EISENDRATH, Chicago.

To Fort Benjamin Harrison, from Camp Grant, Lieut.-Col. G. B. LAKE.

To Fort D. A. Russell, Wyo., as tuberculosis examiner, from Camp Lewis, Lieut. V. MAURICAU, Rockton.

To Fort McPherson, Ga., from Camp Logan, Lieut. D. D. CAMPBELL, Chicago.

To Fort Oglethorpe, from Camp Grant, Lieut. E. R. EASTON.

To Fort Sheridan, Ill., from Camp Dix, Major C. J. POOLE, Mount Vernon; Capt. R. M. KELLY, Chicago; from Camp Dodge, Major H. A. POTTS, Chicago; from Camp Zachary Taylor, Lieut. M. SOLOMON, Chicago.

To Williamsbridge, N. Y., from Camp Dix, Capt. G. C. TALLERDAY, JR., Chicago.

The following orders have been revoked: *To Chicago, Ill.*, from Long Beach, Lieut. A. M. MUELLER, Rock Island. *To Fort Riley* for instruction, Lieuts. G. C. BUNTIN, Benton; C. A. DONOVAN, Chicago; C. HENDERSON, Clay City; C. W. MILLIGAN, Springfield. *To Washington, D. C.*, from Camp Grant, Lieut.-Col. H. C. MICHIE.

Indiana

To Camp Abraham Eustis, Va., base hospital, from Camp McClellan, Capt. W. W. ROSS, La Porte.

To Camp Grant, Ill., base hospital, from Colonia, Capt. J. A. CRAIG, Gary.

To Camp Zachary Taylor, Ky., from Camp Sheridan, Capt. L. H. REDMAN, Elizabethtown.

To Detroit, Mich., from Camp Custer, Capt. R. L. SENSENICH, South Bend.

To Fort McHenry, Md., from Camp Sheridan, Capt. H. L. MILLER, West Baden.

To Fort Ontario, N. Y., from Camp Hancock, Lieut. A. L. OILAR, Russiaville; from Danville, Lieut. E. K. HOLT, Logansport; from Long Beach, Lieut. H. G. HAMER, Indianapolis.

Iowa

To Camp Bowie, Texas, base hospital, from Camp Beauregard, Lieut. L. A. NELSON, Iowa City.

To Camp Dodge, Iowa, base hospital, from Camp Pike, Capt. J. A. HULL, Ottumwa.

To Fort Des Moines, Iowa, from Camp Grant, Lieut. P. M. DAY, JR., Keokuk.

To Jefferson Barracks, Mo., from Camp A. A. Humphreys, Lieut. E. W. SPROULE, Peterson.

To Rantoul, Ill., Chanute Field, from Everman, Lieut. J. T. McBRIDE, Des Moines.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major E. A. MERRITT, Council Bluffs.

Kansas

To Camp Bowie, Texas, base hospital, from Fort Logan H. Roots, Lieut. F. G. POUTRE, Horton.

To Camp Lee, Va., base hospital, from Camp Beauregard, Capt. R. R. NEVITT, Mildred.

To Jefferson Barracks, Mo., from Camp Beauregard, Capt. F. C. CAVE, Winfield.

The following order has been revoked: *To Fort Riley* for instruction, Lieut. B. ANDERSON, Victoria.

Kentucky

To Camp Zachary Taylor, Ky., base hospital, from Camp Dix, Capt. J. L. PHYTHIAN, Newport; from Camp Pike, Lieut. A. H. FALCONER, Louisville.

To Fort McHenry, Md., from Fort McPherson, Lieut. T. R. COLLIER, Louisville.

To Fort Snelling, Minn., from Camp Dix, Major J. W. PRICE, JR., Louisville.

To Fort Totten, N. Y., from Camp Dix, Capt. R. A. IRVIN, Clay City.

To Jefferson Barracks, Mo., from Camp Sheridan, Lieut. J. T. MALONE, JR., Louisville.

Louisiana

To Fort McPherson, Ga., from Markleton, Capt. E. L. LECKERT, New Orleans.

Maine

To Camp Devens, Mass., base hospital, from Army Medical School, Lieut. W. E. CLARKE, Damariscotta Mills.

To New Haven, Conn., from Markleton, Capt. C. B. SYLVESTER, Harrison.

Maryland

To Camp Dix, N. J., to examine the command for nervous and mental diseases, from Camp McClellan, Lieut. F. N. OGDEN, Baltimore.

To Camp Meade, Md., to examine the command for cardiovascular diseases, from Camp A. A. Humphreys, Lieut. C. V. McMEEN, Baltimore.

To Governors Island, N. Y., from Camp Gordon, Lieut. G. H. PRESTON, Baltimore.

Massachusetts

To Camp Shelby, Miss., to examine the command for nervous and mental diseases, from Camp Sheridan, Lieut. C. B. PARTINGTON, Framingham.

To Camp Upton, N. Y., base hospital, from Camp Dix, Major F. H. LAHEY, Boston; from Camp Hancock, Capt. F. W. GAY, Malden.

To Colonia, N. J., from Army Medical School, Lieut. A. KLEIN, Boston.

To Fort Hamilton, N. Y., from New Castle, Del., Capt. W. Y. FOX, Taunton.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Col. J. E. GOLDTHWAIT, Boston.

The following order has been revoked: *To East Norfolk, Mass.*, from Camp Dix, Capt. R. A. HATCH, Boston.

Michigan

To Camp Custer, Mich., base hospital, from Colonia, Lieut. W. M. BURLING, East Grand Rapids; from Walter Reed General Hospital, Capt. W. V. PYLE, Detroit.

To Camp Grant, Ill., base hospital, from Camp Hancock, Lieut. G. H. YEO, Big Rapids.

To Camp Upton, N. Y., base hospital, from Camp Wadsworth, Lieut. A. T. MAYS, Calumet.

To Camp Zachary Taylor, Ky., base hospital, from Camp Hancock, Capt. F. T. F. STEPHENSON, Detroit.

To report to the commanding general, Central Department, from Detroit, Lieut. C. W. SELLERS, Detroit. Eastern Department, from Camp Dix, Lieut. L. E. SEVEY, Grand Rapids. Southeastern Depart-

ment, from Camp Dix, Lieut. C. W. DEAVER, Grand Rapids. Western Department, from Camp Dix, Lieut. S. M. WELLS, JR., Grand Rapids.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to his proper station*, from Cape May, Lieut. C. S. KENNEDY, Detroit; from Pittsburgh, Lieut. W. D. BARRETT, Detroit.

Minnesota

To Camp Grant, Ill., base hospital, from Camp Custer, Lieut. C. A. BOREEN, Minneapolis.

To Fort Leavenworth, Kan., from Fort Benjamin Harrison, Lieut.-Col. E. A. KING, Minneapolis.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, and on completion *to his proper station*, from Chicago, Lieut. J. M. ARNSON, St. Paul.

To San Diego, Calif., Rockwell Field, from Riverside, Lieut. R. A. JOHNSON, Minneapolis.

The following order has been revoked: *To Chicago, Ill.*, from Camp Sevier, Capt. C. W. PAULSON, Minneapolis.

Missouri

To Army Medical School for instruction, and on completion *to Fort Riley*, base hospital, from Camp Dix, Capt. F. D. DICKSON, Kansas City.

To Camp Upton, N. Y., as camp sanitary inspector, from Camp Hancock, Capt. W. J. LYNN, Kansas City.

To Carlisle, Pa., from Lawrenceville, Lieut. K. C. PEACOCK, St. Louis.

To Fort Sheridan, Ill., from West Baden, Capt. J. M. BRADLEY, St. Louis.

To Fort Snelling, Minn., from Corpus Christi, Lieut. V. S. DANFERFIELD, Suray.

To report to the commanding general, Central Department, from Plattsburg Barracks, Lieut. E. F. HARRISON, Kennett.

Montana

To Boston, Mass., from Camp Sevier, Lieut. C. W. DAWE, Great Falls.

To Camp Pike, Ark., base hospital, from Corpus Christi, Lieut. W. D. MADDEN, Great Falls.

Nebraska

To Walter Reed General Hospital, D. C., from Camp Dix, Capt. C. T. UREN, Omaha.

New Hampshire

To Camp Dix, N. J., base hospital, from Camp Hancock, Capt. L. H. COGSWELL, Warner.

To Denver, Colo., from Markleton, Capt. J. C. THOMPSON, North Stratford.

To Fort Hancock, N. J., from Penniman, Capt. W. P. CRAIG, Walpole.

To Fort Ontario, N. Y., from Dansville, Capt. H. W. CLEASBY, Lancaster.

To Newport News, Va., from Pig Point, Capt. W. A. ALLEN, Hampstead.

To Rockefeller Institute for instruction, and on completion to Lakewood, N. J., from Army Medical School, Lieut. A. F. SARGENT, Pittsfield.

New Jersey

To Lakewood, N. J., from Camp Dix, Capt. R. D. SCHIMMELPFENIG, Montclair.

To Newport News, Va., from Camp Dix, Lieut. L. C. GARCIA; from Walter Reed General Hospital, Lieut. J. P. SCHUREMAN, New Brunswick.

To Otisville, N. Y., from Camp Gordon, Lieut. C. ENGLANDER, Cedar Grove.

To report to the commanding general, Eastern Department, from Camp Dix, Lieut. H. R. DUKES, Kearny.

To South Baltimore, Md., from Lawrenceville, Capt. C. BROWNE, Princeton.

To Walter Reed General Hospital, D. C., from Hoboken, Col. J. D. GLENNAN.

New Mexico

To Camp Wadsworth, S. C., from Camp Hancock, Capt. S. H. ECKLES, Silver City.

To Fort Logan, Colo., from Camp Dix, Lieut. D. ALLISON, Gallup.

To Hoboken, N. J., from Camp Cody, Lieut.-Col. A. O. DAVIS.

To Mineola, N. Y., from Camp Dix, Capt. G. D. CARTER, Mesilla Park.

New York

To Army Medical School, from Camp Gum Springs, Lieut. F. HECKEL, New York. For instruction, from Camp Dix, Lieut.-Col. A. H. CILLEY, New York.

To Camp Devens, Mass., base hospital, from Carlisle, Lieut. J. A. HYAMS, New York.

To Camp Dix, N. J., from Camp Logan, Lieut. L. MARCUS, Brooklyn. Base hospital, from Fort McPherson, Capt. R. L. WOOD, Brooklyn.

To Camp Meade, Md., to examine the command for cardiovascular diseases, from Camp Hancock, Lieut. C. E. TUBB, Poughkeepsie.

To Fort D. A. Russell, Wyo., to examine the command for cardiovascular diseases, from Camp Shelby, Lieut. L. T. MANN, New York.

To Fort Des Moines, Iowa, from Camp Grant, Lieut. L. HAUSMAN, New York.

To Fort H. G. Wright, N. Y., from Camp A. A. Humphreys, Lieut. W. C. THOMPSON, Plattsburgh.

To Fort McHenry, Md., from Camp Dix, Capt. F. M. O'GORMAN, Buffalo.

To Fort Ontario, N. Y., from Army Medical School, Lieut. J. B. L'EPISCOPO, Brooklyn; from Camp Wadsworth, Lieut. J. J. LEARY, Utica; from Danville, Major D. L. ROSS, White Plains.

To Fox Hills, Staten Island, N. Y., from Camp Hancock, Capt. H. D. FURNISS, New York; from New Haven, Lieut. W. M. O'CONNELL, New York; from Oteen, Capt. L. H. FINCH, Amsterdam.

To St. Louis, Mo., from Camp Hancock, Lieut. J. W. WURTHMANN, New York.

To Walter Reed General Hospital, D. C., from Philadelphia, Lieut. D. D. KRUPP, Brooklyn.

To Washington, D. C., from Hoboken, Major H. D. COLLINS, New York; from Williamsbridge, Lieut.-Col. W. L. SHEEP. On completion *to Camp Grant, Ill.*, as camp surgeon, from Williamsbridge, Col. P. C. FIELD.

To Williamsbridge, N. Y., from Camp Lee, Lieut. S. WEISS, Brooklyn.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Capt. F. S. WINSLOW, Rochester.

North Carolina

To Camp Sherman, Ohio, base hospital, from West Baden, Lieut. W. MONCURE, JR., Hamlet.

To Mineola, N. Y., from Camp Meade, Capt. J. B. POWERS, Wake Forest.

To report to the commanding general, Northeastern Department, from Biltmore, Capt. T. A. MANN, Fairfield.

Ohio

To Army Medical School for instruction, from Camp Abraham Eustis, Lieut. N. J. SEYBOLD, Toledo.

To Camp A. A. Humphreys, Va., camp hospital, from Camp Hancock, Capt. J. GRIM, Akron.

To Camp Dix, N. J., from Camp Sheridan, Capt. W. A. DEERHAKE, St. Marys.

To Camp Holabird, Md., from Camp Sheridan, Lieut C. R. KITSMILLER, Fresno.

To Camp Upton, N. Y., base hospital, from Camp McClellan, Lieut. R. S. DINSMORE, Cleveland.

To Fort McHenry, Md., from Camp McClellan, Lieut. H. A. BAUGHN, Washington.

To Fort McPherson, Ga., from Fort Oglethorpe, Lieut. E. W. HILL, JR., Marietta.

To Fort Ontario, N. Y., from Danville, Lieut. G. A. ROWLAND, Columbus.

The following orders have been revoked: *To Camp Grant, Ill.*, base hospital, from Camp Cody, Capt. W. P. MILLHON, Columbus. *To Fort Benjamin Harrison*, Lieut. C. C. TAYLOR, East Rochester. *To Fort McPherson, Ga.*, from Camp Sheridan, Lieut. J. J. JENNIE, Cincinnati.

Oklahoma

To Camp Jackson, S. C., base hospital, from Biltmore, Capt. R. E. RUNKLE, El Reno.

To Fort Sill, Okla., base hospital, from Camp Sheridan, Major F. H. CLARK, El Reno.

To Hoboken, N. J., from Camp A. A. Humphreys, Capt. J. M. COOPER, Oklahoma City.

The following orders have been revoked: *To Fort Des Moines, Iowa*, from Camp Travis, Lieut. R. M. HARGROVE, Norman. To Fort Riley for instruction, Lieut. F. A. MILLER, Gowen.

Oregon

To San Francisco, Calif., Letterman General Hospital, from Fort McDowell, Capt. W. C. MUNLY, Portland; from Washington, D. C., Major H. E. CLAY, Salem.

Pennsylvania

To Camp Meade, Md., base hospital, from Camp Dix, Capt. W. O. MARKELL, Wilkinsburg.

To Camp Wadsworth, S. C., from Camp Wheeler, Lieut.-Col. J. H. STEARNS, Delaware Water Gap.

To Carlisle, Pa., from Camp Dix, Lieut. S. A. NORRIS, Homestead.

To Denver, Colo., from Camp Jackson, Capt. C. R. BOWEN, Philadelphia.

To Fort D. A. Russell, Wyo., to examine the command for nervous and mental diseases, from Camp Beauregard, Lieut. W. C. MILLER, Warren.

To Fort Des Moines, Iowa, from Army Medical School, Capt. C. E. LLEWELLYN, Philadelphia.

To Fort McHenry, Md., from Camp Beauregard, Lieut. N. A. TIMMONS, South Bethlehem.

To Mineola, N. Y., from Camp Dix, Major J. P. GALLAGHER, Philadelphia.

To Oteen, N. C., from Camp Hancock, Capt. T. L. COLEY, Bethayres.

To Philadelphia, Pa., from Camp Jackson, Capt. T. C. DAVIS, Philadelphia.

To Pittsburgh, Pa., from Camp Dix, Lieut. S. C. SIMPSON, Pittsburgh.

To report to the commanding general, Eastern Department, from Camp Dix, Lieut. M. W. MYERS, Williamsport.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to his proper station*, from Camp Custer, Capt. H. R. DECKER, Pittsburgh.

To St. Louis, Mo., from Camp Hancock, Capt. W. C. MAXWELL, Lieut. L. H. STUART, Pittsburgh.

To Washington, D. C., from Camp Dix, Major T. M. BAIRD, Wilkes-Barre; from Newport News, Major R. S. McCOMBS, Philadelphia.

The following orders have been revoked: *To Fort Oglethorpe* for instruction, Capt. R. A. THOMPSON, Butler; Lieuts. J. R. BARTLETT, Bellefonte; J. C. ATWELL, Butler. *To Fort Sheridan, Ill.*, from Hoboken, Lieut. G. A. PARKER, South Bethlehem.

Porto Rico

To report to the commanding general, Eastern Department, from Chicago, Capt. A. G. MEHRHOF, Central Aquierre.

Rhode Island

To Camp Zachary Taylor, Ky., base hospital, frwom Camp Logan, Capt. B. S. WILCOX, Providence.

To East Norfolk, Mass., from Camp McClellan, Capt. W. H. DYER, Providence.

South Dakota

To Camp Grant, Ill., base hospital, from New Haven, Capt. J. G. CHICHESTER, Redfield.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to his proper station*, from Camp Grant, Capt. F. E. CLOUGH, Lead.

Tennessee

To Denver, Colo., from Markleton, Capt. R. PILLOW, Jr., Columbia.
To Newport News, Va., from Camp Hancock, Lieut. A. L. ERWIN, Nashville.
To St. Louis, Mo., from Fort Logan H. Roots, Lieut. O. P. WALKER, Memphis.
The following orders have been revoked: *To Fort Oglethorpe* for instruction, Lieut. A. G. BENTLEY, Quito. *To Fort Omaha, Neb.*, Lieut. B. POWELL, Albia.

Texas

To Camp Bowie, Texas, base hospital, from Camp Travis, Capts. I. J. MORRIS, Dallas; H. M. BUSH, San Antonio; Lieut. T. C. BREWER, Dallas.
To Camp MacArthur, Texas, as camp surgeon, from Corpus Christi, Major H. B. McMURDO.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to his proper station*, from Camp Gordon, Lieut. J. S. TOMKIES, Dallas.
To Washington, D. C., Surgeon-General's Office, from Hoboken, Major W. H. HARGIS, San Antonio.
The following order has been revoked: *To Fort Riley* for instruction, Lieut. J. E. ADKISSON, Merkel.

Vermont

To Camp Abraham Eustis, Va., from Camp Hancock, Capt. E. J. MELVILLE, St. Albans.
To Camp Pike, Ark., base hospital, from Camp Sheridan, Lieut. J. D. THOMAS, Pownal.
To Hoboken, N. J., from Camp Sevier, Capt. W. J. WHITE, Shelburne.
To St. Louis, Mo., from Camp Hancock, Lieut. C. A. LOFTIS, St. Albans; from Camp Zachary Taylor, Capt. R. B. THOMAS, Enosburg Falls.

Virginia

To Hoboken, N. J., from Camp Pike, Capt. L. N. HARRIS, Harrisonburg.
To Newport News, Va., from Hoboken, Lieut. J. M. FADELEY, Falls Church.
To Otisville, N. Y., from Markleton, Lieut. N. J. GOULD, Norfolk.
To report to the commanding general, Northeastern Department, from Camp McClellan, Lieut. S. D. WILLIAMS, Norfolk.
To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Walter Reed General Hospital, D. C.*, from Camp A. A. Humphreys, Major J. M. GREER.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital*, for instruction, and on completion *to his proper station*, from Philadelphia, Lieut. B. E. STRODE, Amherst.

Wisconsin

To Camp Grant, Ill., base hospital, from Camp Dix, Lieut. N. F. CROWE, Walworth.
To Camp Upton, N. Y., base hospital, from Camp Hancock, Capt. W. S. DARLING, Milwaukee.
To Chicago, Ill., from Camp Custer, Lieut. H. F. DERGE, Eau Claire.
To St. Louis, Mo., from Camp Pike, Capt. C. O. LATHAM, Green Bay.
To Washington, D. C., Surgeon-General's Office, from Camp Lewis, Major J. R. McDILL, Milwaukee.
The following order has been revoked: *To Fort Oglethorpe* for instruction, Capt. I. F. THOMPSON, Eau Claire.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg. Gen. J. W. SCHERESCHEWSKY, proceed to Spartanburg, S. C., and other points in South Carolina and Georgia for the inspection of pellagra work and of new sites available.

Asst. Surg. Gen. H. S. CUMMING (Reserve), attend Red Cross meeting at Cannes, France; also meeting of Interdepartmental Social Hygiene Board at Paris.

Asst. Surg Gen. T. CLARK (Reserve), represent the Service at a meeting of the American Physical and Educational Association at Chicago, Ill., April 9-12.

Sen. Surg. J. O. COBB, proceed with laboratory car *Hamilton* or *Wyman* with personnel to Indianapolis, Ind., to attend the twelfth annual meeting of the Indiana Sanitary and Water Supply Association, April 9-10.

Surg. MARK J. WHITE, relieved from duty with the Navy, proceed to Palo Alto, Calif., and assume charge of the hospital at that place transferred by the War Department.

Surg. A. M. STIMSON, relieved at Newport, R. I., proceed to the Hygienic Laboratory for duty.

Surg. E. A. SWEET, relieved at the Hygienic Laboratory. Proceed to Camp Hancock, Augusta, Ga., to take charge of the hospital transferred by the War Department.

Passed Asst. Surg. H. F. WHITE, relieved at New Orleans quarantine station. Proceed to Washington, D. C., for duty in the division of venereal diseases.

Passed Asst. Surg. J. G. WILSON, proceed to Camp Logan, Texas, and other points in the South and West to inspect property which may be available for hospital uses.

Asst. Surg. J. W. TAPPAN, proceed to Las Vegas, N. M., for inspection of hospital property to determine its suitability for a tuberculosis sanatorium.

Asst. Surg. R. B. NORMENT, proceed to Washington, D. C., for temporary duty in connection with Public Health Service Reserve Corps.

Acting Asst. Surg. J. G. CULLINS, relieved at Fort Worth, Texas, proceed to Spartanburg, S. C., for duty in the pellagra hospital.

Acting Asst. Surg. SAMUEL LICHTENSTEIN, relieved at Columbia, S. C., proceed to Newport News, Va., for duty in extracantonment sanitation.

Acting Asst. Surg. W. B. ROBERTSON, relieved at Florence, Ala., proceed to Tarboro, N. C., for duty in public health work.

Acting Asst. Surg. T. D. TUTTLE, proceed to Tacoma, Wash., and assume charge of extracantonment sanitation.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

New Medical Society.—A meeting of the physicians of Bessemer was held in the circuit court rooms, February 14, for the purpose of organizing a medical society.

Marine Hospital to Be Enlarged.—The United States Marine Hospital at Mobile is to be enlarged at an expense of $100,000. Quarters are to be erected for the personnel of the official staff, and the present quarters are to be converted into wards for patients. This will double the capacity of the hospital, which will then be able to accommodate 100 patients.

Personal.—Dr. Henry B. Wilkinson, Montgomery, began his duties as county health officer of Montgomery County, March 1, succeeding Dr. Carney G. Laslie. Dr. Wilkinson has also been selected as chairman of the committee on sanitation and health in the work division of the chamber of commerce to succeed Dr. Paul S. Mertins, resigned.——Dr. Arthur A. Kirk, Tuscaloosa, has been named as full-time health officer of Tuscaloosa County, succeeding Dr. Charles M. Murphy, Aliceville, resigned.——Dr. George A. Cryer, Anniston, has been elected health officer of the unified district of Anniston and Calhoun County.——Dr. John S. Tucker, Blocton, has been appointed convict physician at Belle Ellen Mines.——Dr. Russell A. Smith, Brewton, physician inspector in congress in Alabama, has resigned.——Dr. Charles A. Mohr has been elected full-time health officer of the city and county of Mobile.

ARKANSAS

Personal.—Dr. Eustis J. Chaffin, Hughes, was wounded, February 15, in a fight with a negro, who was later killed by the physician.

Health Officers' Conference.—The sixth annual conference of city and county health officers of the state was held in Little Rock, February 27 and 28, under the presidency of Dr. Charles W. Garrison, Little Rock, state health officer.

New Officers.—Little River County Medical Association at its annual meeting in Foreman, February 26, elected Dr. John W. Ringgold, Ashdown, president; Dr. Wesley L. Shirey, Foreman, vice president, and Dr. William E. Vaughan, Richmond, secretary-treasurer.——Phillips County Medical Society at Helena elected Dr. Aris W. Cox, Helena, president; Dr. John W. Bean, Marvell, vice president, and reelected Dr. Montague Fink, Helena, secretary-treasurer.——At the meeting of the Mississippi County Medical Society held at Osceola Dr. Isaac R. Johnson, Blytheville, was elected president; Dr. William J. Sheddan, Osceola, vice president, and Dr. Earl E. Craig, Wilson, secretary-treasurer.

FLORIDA

Personal.—Dr. William D. Nobles has been reappointed a member of the health department of Pensacola.——Dr. Charles L. Jennings, Capt., M. C., U. S. Army, Jacksonville, on duty with Evacuation Hospital No. 9, who accompanied the Army of Occupation to Coblenz, has returned home.——Harper L. Proctor, Capt., M. C., U. S. Army, Jacksonville, attached to the 163d Aero Squadron, has returned from France.

Annual Meeting of Florida Board.—At the annual meeting of the Florida State Board of Health held in Jacksonville, March 7, new legislation was discussed. Dr. Calvin T. Young, Plant City, was appointed district health officer in charge of the Lakeland district. Dr. John Keeley, district health officer of Jacksonville, was transferred to Miami district, and Dr. W. H. Bryan was transferred to the Jacksonville district. Dr. Grace L. R. Whitford, Ozona, head of the child welfare bureau, will hereafter make her headquarters at Tampa and has been given an assistant, Dr. M. Josie Rogers, Daytona.

ILLINOIS

Smallpox in Peoria.—It is reported that there have been seventy-five cases of smallpox in Peoria. Vaccination of all schoolchildren who had not been vaccinated during the last three years has been ordered by the state board of health.

County Tuberculosis Hospital.—The Christian County Tuberculosis Board has been organized with Thomas J. Verler, Pana, chairman; Jesse P. Patterson, secretary-treasurer, the third member of the board being Dr. Thomas A. Lawler, Taylorsville. Christian County voted last November to establish and maintain a tuberculosis sanatorium for Christian County.

Personal.—Louis Ostrom, Capt., M. C., U. S. Army, Rock Island, on duty with Evacuation Hospital No. 49, is now with the American Army of Occupation at Coblenz, Germany.——Dr. John F. Brown, Kankakee, has been appointed superintendent of the Central Hospital for the Insane, Waupun, Wis., succeeding Dr. L. Rock Sleyster.——Dr. James W. MacDonald, Aurora, has been appointed a director of the Kane County Tuberculosis Sanatorium.

Chicago

Personal.—Selim W. McArthur, Capt., M. C., U. S. Army, formerly connected with Base Hospital Unit No. 14, has been ordered to Coblenz, Germany.——David S. Hillis, Lieut.-Com., M. C., U. S N. R. F., has returned from service in the Navy.

Dinner to Dr. Hunt.—The Vassar Alumnae Association of Chicago and the West gave an informal dinner, March 25, in honor of Dr. Barbara Hunt, Bangor, Me., of the American Women's Hospitals, who has just returned from service in France and who delivered an address, illustrated with stereopticon views. Dr. Alice Hamilton of the United States Department of Labor, associate professor of industrial medicine in the Medical School of Harvard University, also spoke.

IOWA

New Officers.—At the annual meeting of the Cerro Gordo County Medical Society held at Mason City, Dr. Stella M. Mason was elected president, Dr. Frank G. Murphy, vice president, and Dr. Stephen A. O'Brien, secretary-treasurer, all of Mason City.

Smallpox in Davenport.—March 5 and 6, seven cases of smallpox were reported in Davenport. Three of these cases have been taken to St. Robert's Hospital and the four other cases have been quarantined.——On March 8, eleven cases were found in one family which had been treated by a chiropractor.

Personal.—Dr. Lillie A. Arnett, Cedar Falls, has returned after service abroad with the Red Cross in France.——Edwin A. Merritt, Major, M. C., U. S. Army, Council Bluffs, who returned to America in March, has been promoted to lieutenant-colonel. He has been in charge of field roentgen-ray units with the Army of Occupation.——Dr. Harry P. Mason, Wilton Junction, has been reelected a member of the school board of Wilton.——Dr. Cassius L. Campbell, Atlantic, has been reelected a member of the board of education of Atlantic.——Emil O. Ficke, Capt., M. C., U. S. Army, Davenport, has returned to his home after seven months' duty in France.

LOUISIANA

Board of Health Annex.—At a meeting of the Louisiana State Board of Health, February 20, it was announced that a building had been purchased in New Orleans for $3,000 for the use of the board. The building will be remodeled.

Health Service Transferred.—The formal transfer of the Public Health Service from the United States to the city of Alexandria, the parish of Rapides and the state of Louisiana, was made, March 7, at a conference between Dr. Oscar Dowling, Shreveport, president of the state board of health; Capt. H. F. Smith, who has been in charge of the service since the establishment of Camp Beauregard; the mayor of Alexandria; commissioners Hunter and McGinnis, and Dr. C. W. Abbott.

Sale of Habit-Forming Drugs Curbed.—Two shipments of morphin consigned to New Orleans druggists have been confiscated by the president of the state board of health under the state law governing the sale and handling of narcotics.——The state board of health at its session, February 21, revoked the licenses of five physicians of New Orleans for prescribing habit-forming drugs, and the license of one New Orleans druggist was revoked. The licenses of a number of country physicians were also revoked for the same offense.

MARYLAND

Personal.—Col Hugh H. Young, Baltimore, who recently returned from France, addressed the Baltimore Life Underwriters' Association at their annual banquet, his subject being the health conditions among the American soldiers.

Anniversary of West End Medical Association.—The first anniversary of the West End Medical Association of Baltimore was celebrated on March 21 by a clinic at the Franklin Square Hospital in the afternoon and a banquet at the Hotel Emerson in the evening. Health Commissioner John D. Blake was the speaker at the banquet and made an address on "The Health of Baltimore." Dr. Asa L. Wessels is the president; Dr. Charles S. Parker, vice president; Dr. William A. Knell, secretary, and Dr. Egbert L. Mortimer, treasurer.

Mumps Prevalent in Baltimore.—Mumps is prevalent in Baltimore, the northern and western sections being especially affected. One hundred and forty-eight new cases were reported to the health department during last week, but it has been more or less epidemic in the city for several months. Many of the cases are accompanied by severe vomiting and an unusual proportion of those affected are adults. Of scarlet fever 178 cases were also reported to the health department during the past week. They are widely scattered all over the city.

MICHIGAN

Medical Staff Organized.—The medical staff of St. Joseph's Hospital, Menominee, organized recently, electing Dr. Walter R. Hicks president, Dr. Stephen C. Mason secretary-treasurer, both of Menominee, and Dr. George F. Colter, Marinette, Wis., chairman of the executive committee.

Tuberculosis Publication for the Public.—The Michigan Anti-Tuberculosis Association has adopted a plan of limited circulation for its new magazine, *Michigan Out-of-Doors*. The publication may be obtained by sending a postal card request giving name and address to the Michigan Anti-Tuberculosis Association, Science Building, Detroit.

Personal.—Angus McLean, Col., M. C., U. S. Army, director of Base Hospital No. 17, A. E. F., for twenty months past, has returned to Detroit. Walter D. Ford, Major, M. C., U. S. Army, Detroit, commander of the unit returned on the same transport.——Leo J. Dretzka, Capt., M. C., U. S. Army, Detroit, has returned from overseas.——Dr. William K. Wright, Manistique, is ill in a hospital in Chicago suffering from carcinoma of the intestine.——Dr. Matthew B. Smith, Fenton, suffered severe cuts and bruises when his car was wrecked by a motor truck, March 3.

MINNESOTA

Reconstruction Work.—At a noonday meeting in St. Paul, March 12, W. S. Miller, Capt., U. S. Army, chief of the educational service at Fort Snelling, gave a talk on reconstruction work at Fort Snelling.

Personal.—Dr. Harry M. Guilford, health commissioner of Minneapolis, is ill with diphtheria and is under treatment at the City Hospital.——Dr. Edward T. Sanderson, Minneota, and Dr. Frank D. Gray, Marshall, have been appointed members of the executive board of the Lyon County Public Health Association.

MISSOURI

Personal.—Dr. George B. Mangold has been elected first vice president and Louis P. H. Bahrenburg, Surg., U. S. P. H. S., medical director of the St. Louis Tuberculosis Society.——Dr. William C. Baird, Bogard, fell on the ice, March 4, fracturing his clavicle and sustaining severe bruises of the hip and right hand.——Dr. Julien A. Gehrung, St. Louis, who has been on duty with the French army since February, 1917, has returned from France.

Missouri Officers Association Formed.—The Missouri Officers' Association is the name of an organization recently formed for the purpose of perpetuating the association of army officers from Missouri who served during the recent war. It is an outgrowth of the Fort Sheridan and Fort Riley association. All medical officers in Missouri who desire to affiliate should address the Missouri Officers' Association, 304 Rialto Building, St. Louis.

Reconstruction Hospital Completed.—The government reconstruction hospital at St. Louis will probably be completed and ready for occupancy by the injured soldiers, April 1. The building taken over by the government is the one formerly used by the city of St. Louis for housing its infirm and decrepit who have become charges on the city's bounty. These unfortunates have been transferred to the commodious building and grounds formerly occupied by the Christian Brothers College which the city has purchased. The government has spent $700,000 in remodeling and equipping the building to be occupied by the wounded soldiers. A staff of about forty-five army surgeons and eighty nurses will be assigned to the

institution which has been constructed to accommodate about 1,000 patients. The equipment will be thorough and complete in every respect and it will be one of the best equipped institutions of the kind now under control of the Medical Department of the Army.

MONTANA

Temporary Health Officer.—Dr. Albrecht D. Eckardt, Helena, who recently received his discharge from the Army, has accepted a temporary appointment as health officer of Bozeman.

Fine for Violation of Drug Act.—Dr. Charles Pixley, Missoula, indicted by the federal grand jury on the charge of violation of the federal law regulating the issuance of habit-forming drugs, and also for failure for two years past to keep a record of prescriptions for such drugs, as required by law, is said to have pleaded guilty in the United States district court, March 10, and to have been fined $100 and costs.

NEBRASKA

Board of Health Bill.—February 5, a bill providing for municipal boards of health in cities of from 5,000 to 25,000 population and limiting the jurisdiction to municipal boundaries, was read a third time and passed.

Personal.—Dr. Samuel J. Stewart, Hastings, has been appointed a member of the advisory board to the state board of health, succeeding Dr. Hall H. Humphrey, Daykin.——Dr. W. W. Kohler, Lexington, is reported to be ill in Los Angeles.

Medical College Fund Suffers.—The legislative finance committee has eliminated the proposed appropriation of $40,000 for a laboratory for the University of Nebraska College of Medicine, Omaha; has reduced the appropriation for new equipment at the University Hospital from $30,000 to $20,000 and the appropriation for maintenance of the hospital from $150,000 to $125,000.

Hospital News.—Drs. S. R. Ayer and Luman B. Swaggart, McCook, have purchased the McCook General Hospital, which was owned and operated by the late Dr. David J. Reid.——The Good Samaritan Hospital, Kearney, has secured a site and a campaign has been launched to raise $100,000 for the erection and equipment of the hospital, which will have accommodations for fifty patients.

NEW JERSEY

Personal.—Mr. T. W. Margerum, Princeton, health officer, registrar of vital statistics, and bacteriologist of Princeton and Princeton University, has succeeded Charles L. Williams, Asst. Surg., U. S. P. H. S., as head of the city health department of Macon, Ga.

NEW YORK

Personal.—Daniel E. Pugh, Jr., Capt., M. C., U. S. Army, Elmira, arrived in New York on his return from France, March 6.——Pearce Bailey, Col., U. S. Army, New York City, has been released from military duty and has been appointed medical chairman of the state commission for the feebleminded to succeed Dr. Walter B. James, resigned.

Diphtheria in Sing Sing.—Reports from Sing Sing Prison state that, March 16, there were sixty-five prisoners down with diphtheria, twenty-five of these having been reported within twenty-four hours. Influenza is still more or less prevalent in the institution and that with other ailments brings the total number of patients up to 115, which has necessitated bringing in additional medical and nursing care from outside.

Hearing on Health Insurance Bill.—According to an announcement made by Senator Davenport the Davenport-Donohue bill which provides for compulsory health insurance has been amended to meet some of the objections made by physicians. Chief among the amendments is a provision by which physicians will not be on a salary, but will be paid according to services rendered under the schedule of fees to be approved by the state industrial commission and which may vary according to local conditions. Provision is made for hearings on the schedules so that they may be revised from time to time. Provision is also made for the free choice of a physician by the patient, thus eliminating the panel originally provided for. Perhaps the most important change in the bill is that which provides that the head of the proposed bureau of health insurance shall be a physician. It is estimated that the cost of this insurance will be 24 cents a week each to employer and employee. At the public hearing, March 19, opponents of the bill stated that according to their estimate it would cost $5,000,000 a year to administer the bill instead of $3,500,000 as the sponsors of the bill claim. Among the opponents of the bill appearing at the hearing were merchants, manufacturers, physicians and fraternal orders. The spokesmen for the bill were the labor unions and women's organizations.

New York City

New Maternity Clinics.—The New York Milk Committee as a part of its plan for extending antenatal work has opened three new maternity clinics in the Bronx, one at the Bronx House, 1637 Washington Avenue; a second at 2380 Hughes Avenue, and a third at 513 East One Hundred and Forty-Ninth Street. Among those speaking at the formal opening of these clinics were Drs. John H. Telfair, Morris L. Ogan, Ralph W. Lobenstine and Arthur J. O'Leary.

Conference on Rehabilitation.—The Red Cross Institutes for Crippled and Disabled Men held a conference which was international in scope at the Waldorf, from March 18-21, at which there were representatives from France, England, Belgium and Italy, and thirty delegates from Canada. The American agencies which were represented included men and women from the office of the Surgeon-General, the Army, the Federal Board for Vocational Education and the Bureau of War Risk Insurance. A closing mass meeting was held on Sunday afternoon at the Hippodrome at which Charles E. Hughes presided. Dr. Maurice Bourillon, president of the permanent interallied committee on war cripples and director of the French national institute for crippled soldiers, described the beginning of the making over a 694,000 Frenchmen incapacitated by war diseases or wounds. It was stated at the meeting that of the men returning from overseas at least 100,000 are not unscathed, being crippled, blinded or gassed and will need the grateful help of America before they can take the place they have earned in life. Dr. C. A. Prosser, director of the Federal Board of Vocational Reeducation, estimates that the number who will require vocational reeducation will reach 20,000.

NORTH CAROLINA

State Society to Meet.—The annual meeting of the Medical Society of the State of North Carolina will be held at the Carolina Hotel, Pinehurst, April 15-17, under the presidency of Dr. Cyrus Thompson, Jacksonville.

Urologic Clinic Chartered.—The Crowell Urological Clinic of Charlotte has been incorporated with a capital stock of $125,000, by Drs. Andrew J. Crowell, Robert H. Lafferty, Joseph A. Elliott and S. Raymond Thompson.

Hospital to Reopen.—The Wesley-Long Hospital, Greensboro, will be reopened about April 1, and will be under the charge of John W. Long, Lieut.-Col., M. C., U. S. Army, who has just been discharged, after having been in service since June, 1917, in this country and with the American Expeditionary Forces in France.

Clinic for Charlotte.—A conference of physicians was held at the city health office, Charlotte, March 8, at which Dr. Carl Fellers discussed with the medical men the projected establishment of a clinic for venereal disease, to be operated jointly by the city of Charlotte and Mecklinburg County, with financial aid from the state and the United States Public Health Service.

Personal.—Marshall H. Fletcher, Major, M. C., U. S. Army, Asheville, who has been in command of Base Hospital No. 65, Kerhoun, France, has been discharged from service, and will resume practice in Asheville.——Dr. Harvey P. Barret has been elected city bacteriologist of Charlotte, succeeding Lloyd R. Jones, Asst. Surg., U. S. P. H. S., who has been transferred to Fayetteville.

Mosquito Eradication.—The United States Public Health Service will give the city of Wilmington $10,000 for the continuation of the work of mosquito eradication, provided an appropriation of like amount is made by the city of Wilmington and New Hanover County. The work already done has included the digging of 20 miles of ditches, the clearing of 17½ miles of streams, the construction of 1½ miles of dikes, the installation of six tide-gates and the spraying of large quantities of crude oil over the waters of the swamp lands.

OHIO

Personal.—Dr. Harry L. Rockwood, acting health commissioner of Cleveland, since Dr. Robert H. Bishop, Jr., went to Italy with the American Red Cross Tuberculosis Mission,

has resigned and expects to enter private practice.——Henry M. Pearce, Capt., M. C., U. S. Army, Urbana, recently discharged after a year of service overseas with the Eighty-Third Division, is reported to be critically ill with meningitis.——F. Dale Barker, Capt., M. C., U. S. Army, Dayton, has returned from overseas.——Dr. Charles A. LaMont has resigned as city health officer of Canton, to take effect April 1.

OREGON

Personal.—Dr. George Parrish, city health officer of Portland, who has been away on leave of absence for two months, has returned and has resumed his duties.——Dr. John G. Abele, who has been serving as acting city health officer of Portland, has now become first assistant health officer in charge of contagion in Portland.——Drs. Calvin S. White, G. Norman Pease and Harold C. Bean, all of whom have served in the Army in this country or abroad, have been added to the staff of Reed College Clinic, Portland.——Dr. Rasmus P. Mortensen, Springfield, underwent operation for tuberculosis of the intestines in a Portland hospital, February 27.——Frank R. Mount, Major, M. C., U. S. Army, Oregon City, and on duty with the A. E. F. in France, has been promoted to lieutenant-colonel, M. C.——Edwin W. Morse, Capt., M. C., U. S. Army, Portland, on duty with Base Hospital No. 46, returned, February 25, after nine months' service in France.——Fred A. Lieuallen, Capt., M. C., U. S. Army, Portland, on duty with the Forty-Seventh Infantry, A. E. F., in France, thrice cited for bravery, has been discharged, disabled from having been gassed, and has returned to Portland.

PENNSYLVANIA

Philadelphia

Personal.—Dr. Percival M. Kerr, Elwyn, medical attaché to Admiral Wilson and former member of the Methodist Hospital Unit, has returned from France where he has been since October, 1917.——Dr. Orlando H. Petty, Lieutenant in the Naval Reserve Force, has been awarded the Distinguished Service Cross for extraordinary heroism.——Dr. H. H. Wickert, now serving with the Episcopal Hospital Unit No. 34, with the Army of Occupation, has been promoted to the rank of major. He enlisted in the British army before this country entered the war and subsequently was transferred to the Episcopal Hospital Unit.——Drs. Edward Martin and John D. McLean, commissioner and assistant commissioner of health of Pennsylvania, will be the guests of honor at a dinner given by the Philadelphia Clinical Association and other medical organizations in and near Philadelphia, at at Bellevue-Stratford, April 10.

SOUTH CAROLINA

Personal.—Dr. William O. Wrightson, who has just been discharged from the Medical Corps, U. S. Army, has been appointed director of health of Spartanburg, succeeding Hugh D. Ward, P. A. Surg., U. S. P. H. S.——Dr. James C. Mitchell, Anderson, formerly health commissioner, who has just returned from army service, has been reappointed to that position, succeeding Dr. E. R. Vandergrift, resigned.——H. F. White, P. A. Surg., U. S. P. H. S., who has been in charge of the work of the service in Greenville and the surrounding territory since April, 1918, and who served for several months as health commissioner of Greenville, has been ordered to other duties. The city council, at a special meeting, February 25, adopted resolutions of thanks and appreciation.

SOUTH DAKOTA

Personal.—Dr. James O. Lee, Pierre, has been appointed physician and surgeon of the U. S. Indian School, Pierre, succeeding Dr. Charles M. Hollister.

New Clinic.—The old Methodist Church property, Sioux Falls, has been sold to Drs. Thomas J. Billion, Monte A. Stern, Earl E. Gage, Nelius J. Nessa, Guy E. VanDemark, George A. Stevens, Edwin L. Perkins and Roy G. Stevens. On this site will be erected a building at a cost of $60,000, to be known as the Sioux Falls Medical and Surgical Clinic.

TENNESSEE

State Association to Meet.—The Tennessee State Medical Association will hold its eighty-sixth meeting in Nashville, April 8-10, under the presidency of Dr. Richmond McKinney, Memphis.

Personal.—Dr. William Krauss, Memphis, has been elected medical director of the Memphis and Shelby County Anti-Tuberculosis Society, and Drs. A. B. Curry, William T. Pride, William Krauss, T. W. Lewis, Harry F. Minor and Cooper Battle are the medical members of the board of directors.

Endowment for Meharry.—Report states that the General Education Board and the Carnegie Foundation for the Advancement of Teaching have each voted to give $150,000 for the endowment of Meharry Medical College, Nashville, provided the Methodist Episcopal Church will raise $200,000, which would make a total of $500,000. From the standpoint of number of students enrolled, Meharry Medical College is the largest negro medical school in the country.

City to Take Over Federal Clinic.—The city of Chattanooga has arranged to take over the operations of the federal government venereal clinic, located in the city hall, under the charge of Asst. Surg. Carlisle P. Knight, U. S. P. H. S. Dr. Stanton S. Marchbanks will be left in charge of the clinic.——Col. Mack Morris, formerly of Trenton, now of Jackson, has offered to donate to the city of Trenton a hospital to cost not less than $15,000. The only obligation to the city is to keep the hospital in as good a condition as it was when presented.

TEXAS

New Editor.—Dr. Paul Gallagher, El Paso, has been elected editor of the *Southwestern Medical and Surgical Journal* in place of Dr. Elliott C. Prentiss who has resigned.

Chiropractor Fined.—It is reported from El Paso that Dr. Byron Black, a chiropractor, was found guilty of practicing medicine without a license and sentenced to a day in jail and a fine of $250.

New Officers.—Bee County Medical Society at its annual meeting held in Beeville elected Dr. Lawrence L. Griffin, president; Dr. Andrew J. Turner, vice president, and Houston Neeley, secretary.

Hydrophobia Bill Passed.—The senate committee on public health has reported favorably on the Hertzberg bill which provides for the free treatment of hydrophobia at the State Pasteur Institute, Austin.

New State Board Officers.—At a meeting for organization of the new state board of medical examiners held in Waco, February 28, Dr. William C. Swain, Dallas, was elected president; Dr. E. Marvin Bailey, Houston, vice president, and Dr. Manuel F. Bettencourt, Mart, secretary.

City Takes Over Laboratory.—Formal transfer of all the equipment in the United States Public Health Service laboratory at Fort Worth was made to the city health department, February 11. This is the first step in taking over by the city all the health work heretofore carried on by the federal government.

Bill Passed to Establish State Quarantine.—The senate committee on public health rendered a favorable majority report, February 18, on the Fly house bill which provides for turning over to the federal quarantine authorities the state quarantine stations and matters at gulf ports and along the border.

Personal.—William B. Carrell, Capt., M. C., U. S. Army, Dallas, on duty at the Orthopedic Hospital, Bordeaux, France, has been promoted to major.——Robert Finney Miller, M. C., U. S. Army, who has been in France for more than a year, has returned to his home, near Gay Hill.——William L. Crosthwait, Major, M. C., U. S. Army, Waco, who has been on duty at Base Hospital No. 55, A. E. F., in France, has been discharged and has returned home.

Health Association Meeting.—At the annual meeting of the Texas Public Health Association held in Austin, February 12, the following officers were elected: William A. Bowen, Arlington, president; Drs. Elva A. Wright, Houston, and Beverly T. Young, San Antonio, vice presidents; Dr. Zachary T. Scott, Austin, secretary, and H. A. Wroe, Austin, treasurer. In addition to the officers named the following were elected members of the board of directors. Drs. C. B. Baird, Dallas; William M. Brumby, Waco; Orville T. Bundy, Hutto; Ira C. Chase, Fort Worth; Boyd Cornick, San Angelo; Robert B. Homan, El Paso; John S. Lankford, San Antonio; Joseph B. McKnight, Carlsbad; Frank Paschal, San Antonio, and C. W. Goodard, Austin. During the year more than 400,000 pieces of literature bearing on public health were distributed, more than 300,000 children were organized in the modern health crusade movement, and more than 30,000 personal letters were written by the association.

WASHINGTON

Chinese Doctor Held.—Sing Lock of the Sing Lee Chinese Medicine Company, Seattle, it is reported, was arrested, March 5, on charges of having opium in his possession and was released on bail of $500.

Personal.—Dr. Albert E. Stuht, Spokane, was sent, March 7, to Olympia by the Spokane County commissioners, to urge the passage of Senate Bills 6 and 96 which have reference to the isolation of individuals suffering from venereal disease.——Dr. Howard H. Smith has been appointed health officer of Yakima city and county succeeding Dr. Benjamin S. Cerswell, North Yakima. He takes office June 5.——Dr. John B. Anderson, resigned, March 4, as health officer of Spokane, to resume duties as state health commissioner.——Ralph Hendricks, Major, M. C., U. S. Army, who is expected to return from France before May 1, has been appointed health officer of Spokane.——Harry C. Blair, Lieut., M. C., U. S. Army, Tacoma, a member of Base Hospital Unit No. 46, arrived in Tacoma, February 23, after seven months in France.——Dr. Jesse J. Tilton, Spokane, has been elected a member of the board of directors of the Social Service Bureau.——Dr. Perry W. Cornue, Yakima, has been elected president of the Illinois Club.

CANADA

University News.—McGill University will erect a memorial hall to honor her fallen graduates and undergraduates. It will be a convocation hall and will cost about $150,000.

Personal.—Col. John M. Elder, Montreal, has returned from overseas.——The name of Sir Auckland C. Geddes, Montreal, formerly professor of anatomy in the University of McGill, is mentioned to succeed Sir William Peterson in the principalship should the latter not be able to continue his official duties on account of having recently suffered a paralytic attack.——Col. George E. Armstrong, C.M.G., Montreal, has become consultant in surgery at the Royal Victoria Hospital, Montreal.——The Hon. Dr. Robert A. Pyne, Toronto, formerly minister of education for Ontario, has been appointed to the board of governors of the University of Toronto.

Hospital News.—Ottawa, Canada, is asking permission of the Ontario legislature to raise $1,500,000 for establishing a civic hospital.——A citizen of Kitchener, Ont., offers $25,000 for a nurses' residence in connection with the Kitchener-Waterloo Hospital, provided $10,000 can be raised by the board from public subscription.——The government of Quebec and the government of Canada will provide the funds for enlarging the Ste. Agathe Sanatorium, Quebec, so as to increase the accommodations from 70 to nearly 300 beds. The extensions are to cost in the neighborhood of $300,000, and the institution will be used for five years for tuberculous soldiers.——Vancouver is to have a new emergency hospital. The entire cost will be about $30,000. The provincial government of British Columbia will contribute $15,000.—— The Toronto city council has been asked for a grant of $40,000 toward liquidating the deficit of the Hospital for Sick Children which amounts to $89,753.——An addition is to be erected to the Royal Victoria Hospital, Montreal, at a cost of $12,000.

Ontario Social Hygiene Committee.—Following up the interim report on venereal diseases in Ontario, Mr. Justice Hodgins, who sat as royal commissioner, has presented a second report to the Ontario government, containing his recommendations. He recommends the appointment of a general committee, large enough to provide for its division into sections devoted to special departments of propaganda, and suggests the foregoing name for the committee. He recommends that the chairman of the provincial board of health should be the chairman of the executive committee of the organization. He also recommends that the government provide the money necessary to carry on this work, and that aid should be secured from the Ottawa government. A compulsory course is to be made for medical students in the venereal diseases. He says that salvarsan is a product protected by a German patent. In Canada only two licenses to manufacture it have been granted, and 5 per cent. of the gross sales have been reserved, presumably for the ultimate benefit of the German owners. Only one license has made any progress in Canada in producing it, although the licenses were granted in 1915. The patent commissioners had refused to allow the Ontario Board of Health to manufacture it. He thought this refusal was a national mistake, unless the federal government intended to undertake its production on a large scale.

GENERAL

Base Hospitals Discontinued.—The base hospital at Camp Custer, Mich., and the one at Travis, Texas, have been discontinued and will hereafter be operated as camp hospitals.——No overseas patients will hereafter be sent to Camp Doniphan, Okla.

Flight Surgeons Meet.—Members of the Medical Department of the Air Service of the Army who compose the Flight Surgeons Association met in Dallas, Texas, March 24 to 26. Dr. John O. McReynolds, Dallas, is president of the association and among those who are expected to be present are George H. Crabtree and Albert E. Truby, Cols., M. C., U. S. Army, chief medical executive officer and chief of the air service, respectively.

FOREIGN

Cholera and Influenza in Japan.—It is reported that epidemics of cholera and influenza are prevailing in Japan.

The Schwabacher Prize.—The Schwabacher prize of 20,000 marks was recently divided between Professors Rubner and Zuntz, both of Berlin, for their work on diet in war time.

Reception to American Physicians in London.—A reception was given to 100 American Army medical officers in London, March 19. These officers had arrived in London to take up postgraduate work in England. Sir Humphrey D. Rolleston, president of the Royal Society of Medicine, acted as toastmaster and among the other speakers were Sir Rickman J. Godlee, president of the Royal College of Surgeons; Sir Norman Moore, president of the Royal College of Physicians, and Sir William Arbuthnot Lane.

Some Vital Statistics in Germany, 1914-1917.—J. Schwalbe in a signed editorial in the *Deutsche med. Wochenschrift*, Dec. 12, 1918, states that the mortality from tuberculosis in Germany has increased from 15.7 to 31.7 per ten thousand inhabitants. In 380 towns of over 15,000 inhabitants, the deaths in 1918 from tuberculosis total 43,320 above the figure for 1913. In Berlin the average death rate per month among women has increased from 1,907 in Oct., 1915, to 3,136; the deaths from phthisis, from 205 to 1,752.

Women Decorated by the French Government.—Dr. M. Louise Hurrell, Rochester, N. Y., director of American Women's Hospital No. 1, Luzancy, France, and three of her staff, Mrs. Lenoire-Lehman, purchasing agent and interpreter, and Miss Pettengill and Miss Whitaker, nurses, were decorated by the French government for stamping out the typhoid epidemic in certain cantons of Seine-et-Marne and Aisne.——Dr. Cora H. M. Allen, Heron Lake, Minn., and Eva C. Reed, San Francisco, members of the American Women's Hospital, were also decorated for like service.

Red Cross Hospital in Serbia.—The American Red Cross Hospital established at Monastir, Serbia, under the care of Dr. Regina F. Keyes, Buffalo, is the American Women's Hospital of the American Red Cross and was located until recently in Vodena, Greece. The American Women's Hospitals Organization, by the War Service Committee of the Medical Women's National Association, has given $25,000 for the maintenance of this hospital. Dr. Keyes has been abroad since November 17, and has worked constantly without vacation or change of any kind, operating three times a week, seeing daily between sixty or seventy dispensary patients, and visiting the families of 3,000 refugees.

Deaths in the Profession Abroad.—Dr. **E. Rossoni,** until recently professor of medical pathology at the University of Rome, aged 71.——Dr. **P. Tria,** director of the municipal hospital at Tripoli, member of the editorial staff of the *Riforma Medica*, and formerly lecturer on clinical medicine at Naples, aged 34.——Dr. **Adolf Schmidt,** professor of internal medicine at the University of Halle, a pioneer in the study of diagnostic methods in intestinal disease, author of numerous works on the subject, aged 54.——Dr. **M. Dalmau,** of Barcelona, the first to discover the existence of icterohemorrhagic spirochetosis in Spain. He had not long returned from a graduate course of training in biologic chemistry and bacteriology in this country on a traveling scholarship provided by the Spanish Junta de Ampliacion de Estudios.——The *Nederlandsch Tijdschrift* reports further the deaths of Dr. **E. v. Herczel,** professor of surgery at the University of Budapest; Dr. **K. H. v. Bardeleben,** the anatomist, professor of anatomy at the University of Jena and author of a long series of works on anatomy, spermatology and evolution, aged 69; and Dr. **R. Kobert,** professor of pharmacology, physiologic chemistry and the history of medicine at the University of Rostock, an authority on materia medica and physiologic chemistry, intoxications, etc., aged 65.

BUENOS AIRES LETTER

BUENOS AIRES, Feb. 10, 1919.

Death of Professor Piñero

The professor of physiology of the Facultad de Medicina of the Univeristy of Buenos Aires, Dr. H. G. Piñero, died recently at Mar del Plata.

Headquarters for Public Health Work in Catamarca

The Departamento Nacional de Higiene has recently inaugurated a regional sanitary station in Catamarca, designed principally to combat malaria in that part of the country.

The Hospitals of Buenos Aires

The appropriations for the municipal hospitals of Buenos Aires were scanty even before the war, but they are entirely inadequate now that the prices of drugs and provisions have increased so considerably. The municipal authorities appear to appreciate this, and in their discussions seem to be inclined to enlarge the appropriations.

Regulation of Prostitution

The Socialist member of the city council, Dr. Jimenez, has proposed that regulation of prostitution be abandoned. He argues that the present measures for regulation in reality amount to a legalized slavery, and that the medical oversight is illusory, as 90 per cent. of the persons with venereal disease who are given treatment in public institutions acquired the disease in houses given official inspection. He advocates the creation of ten night dispensaries for giving aid to persons with venereal disease.

Secularization of the Hospitals

In the hospitals of Buenos Aires, religious sisterhoods perform certain administrative functions or serve as nurses. The Socialist members of the city council have proposed the secularization of the hospitals and ask the suppression of religious propaganda and the doing away with the Roman catholic chaplains. The clergy of any sect could be summoned as is the rule at present.

Progress of Public Health at Buenos Aires

According to the data compiled by Dr. Coni, 69,272 persons have died from pulmonary tuberculosis at Buenos Aires in the last fifty years. The mortality, which was 27.2 per ten thousand in the second decade, dropped to 17.4 per ten thousand in the last decade.

Smallpox has disappeared completely from the city, since the vigorous campaign instituted by Dr. Penna in 1910. Compulsory vaccination stamped the disease out entirely.

Between 1887 and 1890 diphtheria was responsible for half the mortality. In the last five decades the mortality from it has been 10.3, 10.9, 11.9, 1.7 and 1.6.

Typhoid fever was endemic here until sanitary measures were introduced. Since then it has appeared in epidemic form at times, but is growing less frequent each year. The general mortality from all other infectious diseases has declined by slow degrees with the progress in public hygiene.

LONDON LETTER

LONDON, March 5, 1919.

The Ministry of Health

Dr. Addison, president of the Local Government Board, has introduced the expected Ministry of Health bill. He said that during the last four years we had lost about 700,000 of our race in the war. During the months of October, November and December last, there was as high an average mortality per month from influenza alone as the average monthly mortality during the war from causes connected with the war. Those who were lost were largely people in the prime of life. There was no doubt that in this matter our practice was far behind our knowledge. We had in the elementary schools an army of children physically defective. What a source of national weakness they were was revealed during the war when hundreds of thousands were unable to pass even the modest standard of physical fitness that the army required. At present a large number of different departments and about 1,800 local authorities deal with public health. Steps must be taken to unify control and get common direction. This country ran the risk of the introduction into it on demobilization of a number of diseases, some of them of a very dangerous kind, from which it had hitherto, or for many years past, been free. Large numbers of soldiers had been affected by dysentery, malaria and other diseases, and an endeavor was being made by joint action of the departments—the War Office, the Admiralty, the Air Ministry, and the Local Government Board—to take steps in common, as far as that was possible, to prevent the introduction and spread of various tropical and other diseases. In the proposed reform there would be two stages, first, to bring together the government's departments concerned in health—the Local Government Board, the insurance commissioners, the board of education and the privy council. This gave the central authority which controlled all the general services of the country, particularly those that related to infancy and maternity. At a later stage powers of control with respect to malnutrition and the ministry of pensions in regard to disabled sailors and soldiers would be taken over. This was not done now because the first amalgamation was a quite big enough undertaking. The ministry of health does not take over the Central Medical Research Committee, which has done such excellent work during the war. This is placed in a detached and independent position under the privy council and will be as wide in its operations as the empire. An important change is the separation of the treatment of sickness from all relations with the poor law. Sickness in the future will be dealt with as a whole from the point of view of the nation and not in relation to destitution. The minister of health will have very wide powers dealing not only with medical services but with preventive services. Thus housing will be in his charge. There will be a wide extension of facilities in connection with nursing, midwifery, diagnosis, hospitals, etc. At present nobody suffered more than the poorly paid classes. Voluntary hospitals looked out for the poor, and there was always a long waiting list. But the poor middle classes cannot afford the fees of the great expert and they do not want to be recipients of charity. Beyond and above any extension of remedial service, prevention is what the ministry must aim at.

A Medical Trade Union

As stated in a previous letter to THE JOURNAL, the projected ministry of health has aroused considerable apprehension in the profession, as it is expected to involve further state control and perhaps the introduction of whole-time medical service. The experience of the national insurance act is considered anything but assuring, but the critics of the government differ widely among themselves. The profession is divided into at least three factions—the panel physicians, who have formed themselves into a trade union (the Medico-Political Union); the National Medical Union, which is and always has been bitterly opposed to the insurance act, and the British Medical Association, which endeavors to protect the interests of the profession as a whole but satisfies neither of the two former bodies, who are extremists. The futile attempt to organize the whole profession by a meeting in London called together by the National Medical Union has already been described. It broke up in confusion when the proposal in favor of a trade union, brought forward by members of the Medico-Political Union, was declared lost. The Medico-Political Union has now retorted by calling another mass meeting of the profession to discuss the following resolution: "That in view of the far-reaching changes inevitable in the medical services of this country consequent on the coming Ministry of Health, it is essential that the profession should be solidly and democratically organized on a trade union basis to enable it to negotiate effectively with the government in the interests of the community, no less than those of the profession." About 300 physicians attended. The chairman said that the meeting had been arranged because of the changes which were foreshadowed by the ministry of health bill, which made it imperatively necessary that every branch of the profession should be able to gain a hearing for itself when the provisions of that measure came to be discussed. Panel practitioners would remember what took place seven years ago. The question for them to consider was whether they were any better prepared today to meet the changes that were taking place in their life and work. He was afraid they were not. They had a hope now that they would be able to regain their professional dignity and independence. It had never been their object to strike against sick persons; but, nevertheless, the worm might eventually have to turn, and they must keep an open mind on that subject. In the discussion, the main argument was the success with which trade unions dealt with the government as compared with the failure of the present

medical organizations, and the audience showed itself strongly favorable to this view. The opposition was not strong. The main arguments used were that the profession as a whole would never accept trade unionism, and therefore a trade union would further divide it. An appeal to remember the dignity of the profession, and that on those present had fallen the mantles of Harvey and Jenner, fell on deaf ears. An amendment going farther than the resolution: That the trade union be affiliated to the labor party and trade union congress was moved. It was contended that it would be a great advantage to have the whole weight of the trade union movement behind any demand. Against the amendment was urged the fact that the Medico-Political Union consisted of physicians of all political views and that to many the labor party was anathema. The amendment was rejected by an overwhelming majority. The original resolution was carried by 207 against 30. The Medico-Political Union regards the result with great satisfaction, but it must be remembered that all of the physicians in the metropolitan area numbering about 7,000 were invited by a postcard stating the object of the meeting. Probably a higher proportion of the members of the union and of others in favor of the project attended than of those opposed to it. Hence the voting cannot be taken as representative of the profession.

The Influenza Epidemic

Influenza shows some signs of abating in certain areas in London. In North Yorkshire, however, it is on the increase. In Durham County all the elementary schools are closed for three weeks, and whole families are stricken. In Leeds all the elementary schools have been closed. In Edinburgh during the week, 316 deaths occurred, equal to 48.6 per thousand of the population, the highest figure ever reached until the week before last, when an identical number was recorded. These high rates are largely due to the influenza epidemic. The disease is rife in Dublin, and the death rate has risen steadily. A special meeting of the corporation has been called with the object of making it compulsorily notifiable. The medical staffs of the hospitals advised the closing of all schools, theaters, picture houses and public libraries. The epidemic is spreading all over Ireland. The Local Government Board has published a memorandum advising the public not to make a general use of face masks during a period of influenza prevalence. Face masks, however, should be used as much as possible by those who attend on the sick. Although no form of inoculation can be guaranteed to secure immunity, the board says there need be no hesitation in accepting inoculation when it is administered under competent medical advice.

PARIS LETTER

PARIS, Feb. 27, 1919.

Vital Statistics of France

The publication of annual or semiannual vital statistics reports was suspended in France during the war. All or at least part of eleven départements were invaded by the enemy, therefore, detailed information on these matters was not available. The ministère du travail (labor) has published in the *Journal officiel* the official statistics for 1915, 1916 and 1917 of seventy-seven départements, and the figures for 1913 are given for purposes of comparison. Although these data are by no means complete, not including all of the country for 1913, they suffice to elucidate the enormous loss in population resulting from the war, and the demographic consequences which follow in the wake of these happenings.

For the seventy-seven départements concerned, the number of births and deaths was as follows:

	Births	Deaths
1913	604,811	587,445
1914	594,222	647,549
1915	387,806	655,146
1916	315,087	607,742
1917	343,310	613,148

These statistics show that while in 1913 the number of births exceeded the number of deaths by 17,366, the deaths in 1917 exceeded the births by 269,838. In these seventy-seven départements alone, therefore, the deaths were in excess of 883,160 dating from the beginning of the war to the end of 1917.

It must be noted that these statistics do not include the eleven invaded départements in which war was waged for fifty-two months and in which the losses caused by the war were not counted, but which officially have been stated as being 1,400,000 men.

Deaths

The death is announced of Dr. Henri Henrot, aged 85 years, a former mayor of Reims, vice president of the Conseil supérieur de l'Assistance Publique and corresponding member of the Académie de médecine.

Dr. Charles Bonnet, vice president of the Association des médecins légistes, is dead, aged 47 years. Soon after the beginning of the war he placed at the disposition of the Allies the Maison de santé in Paris, of which he was director. This institution became the Canadian hospital and then the hôpital de l'Ecosse.

Dr. Hippolyte Morestin, associate professor in the Paris medical faculty, surgeon of the hôpital Tenon and the hôpital militaire du Val-de-Grâce, died recently, aged 48 years. He was born at Fort de France, Martinique, and became a hospital intern when only 19 years of age, a most exceptional occurrence. Although it was known for a long time that he was a bold and masterly operator, his gifts did not receive general acclaim until after he gave his services to his country. He worked at Val-de-Grâce, specializing in head and face wounds and prosthetic apparatus, and his results have commanded attention and admiration everywhere. His patience was inexhaustible, therefore he succeeded often in reconstructing the face and rendering existence bearable to many horribly disfigured soldiers.

Dr. Henry Barnsby, professor of clinical surgery in the Tours medical faculty, recently died there, aged 49 years.

Dr. André Chantemesse, professor of hygiene in the Paris medical faculty, died from influenza, aged 68 years. Born at Puy, Oct. 13, 1851, Chantemesse had a particularly rapid career. He became hospital intern in 1880; hospital physician in 1885; agrégé in 1889, and professor of hygiene in the Paris medical faculty in 1898. In 1901 he became a member of the Académie de médecine, section of public hygiene and forensic medicine, and in 1903 he was named inspector general of the Services sanitaires. He was a student of Pasteur, and was one of the first teachers of bacteriology. His researches were made along the lines of the application of bacteriology to hygiene. In March, 1897 in collaboration with Dr. Fernand Widal, Chantemesse discovered the typhoid bacillus in the water of a *borne fontaine* in the Ménilmontant quarter of Paris. Having succeeded in culturing the germ, he prepared an antityphoid serum, which was of great value during the war.

Among his publications may be mentioned his work on typhoid fever, flies and cholera, mosquitoes and yellow fever, written in collaboration with Dr. Borel, and "Frontières et prophylaxis."

Sanatorium de Bligny

The American Red Cross will assume the construction and maintenance of a new pavilion at the Bligny sanatorium (département de Seine-et-Oise). Two hundred tuberculous soldiers will be hospitalized there. At the opening ceremonies, Dr. Louis Mourier, undersecretary of state for the Service de santé militaire, paid tribute to the excellent services rendered by this sanatorium both before and during the war. He extended hearty thanks to our allies for the charitable aid given our sick soldiers. When the sanatorium will no longer be needed for military purposes, it will be at the disposal of the authorities of Paris and the vicinity for use as a hospital. A cure was obtained in 67 per cent. of the cases treated.

Marriages

ROSCOE FREDERICK MAUSER, Lieut., M. C., U. S. Army, Fountain Springs, Pa., to Miss Jean Morrissey of Ashland, Pa., at Chattaroux, France, March 6.

FRANK NATHANIEL EVANS, Lieut., M. C., U. S. Army, Springfield, Ill., to Miss Gertrude Maw of Essex, England, March 12.

KENNETH E. LOWMAN, Asst. Surg., Lieut., U. S. Navy, to Mlle. Myrtille Adele Fautrat, at Brest, France, January 11.

DWIGHT HENDERSON MURRAY, Syracuse, N. Y., to Miss Elizabeth Fletcher Mann, at Lyons, N. Y., March 22.

WILLIAM H. HEINZMANN to Mrs. Cordelia Clopton Hewlett, both of San Francisco, at San Jose, Calif., March 9.

ROBERT FISCHELIS, Philadelphia, to Miss Juanita C. Deer of Chicago, February 20.

MARK JAMPOLIS to Miss Janet Hill McKenna, both of Chicago, March 1.

Deaths

Samuel Carrol Gibson, Reno, Nev.; Missouri Medical College, St. Louis, 1879; aged 61; at one time a member of the Nevada State Medical Association; superintendent of the Nevada State Hospital for Mental Diseases, Reno, from 1904 to 1911; physician of Washoe County; president of the Nevada State Board of Health since 1899; chief surgeon of the Nevada, California and Oregon Railroad since 1900; a director in the Farmers' and Merchants' National Bank, Reno; died in a hospital in San Francisco, March 11.

William Clarence Gates ⊕ **Capt., M. C., U. S. Army,** Bucyrus, Ohio; University of Michigan, Ann Arbor 1890; aged 50; for several years chief surgeon of the Calumet and Hecla Mining Company, Calumet, Mich.; founder of the Crawford Hospital, Bucyrus; who entered the military service, April 5, 1917, and was on duty at Camp Sherman, Chillicothe, Ohio, and then was sent overseas, and had been on duty at the base hospital in Vichy, France, for six months; died in that institution, February 21, from lobar pneumonia.

Abner Hugh Cook ⊕ **Lieut., M. C., U. S. Army,** Hot Springs, Ark.; Tulane University, New Orleans, 1910; aged 32; a specialist in internal medicine; on duty at Fort Oglethorpe, Ga., and later at Camp Sherman, Chillicothe, Ohio; formerly major and surgeon of the Fourth Infantry, Ark. N. G.; who was honorably discharged from the United States service, Dec. 17, 1918; died at his home, March 10, from pneumonia.

John Thomas Scott ⊕ Orrville, Ind.; Kentucky School of Medicine, Louisville, 1886; aged 55; secretary of the Stafford County (Kan.) Medical Society; formerly of Indianapolis; professor of obstetrics in the Central College of Physicians and Surgeons, Indianapolis, and consultant in obstetrics in the Indianapolis City Hospital and Dispensary; died at his home in Orrville, February 18, from pneumonia.

Alexander P. Fitch, Crawfordsville, Ind.; Washington University, Baltimore, 1871; aged 70; a member of the Indiana State Medical Association; formerly secretary of the Boone County (Ind.) Board of Health; assistant supreme medical examiner of the Order of Ben Hur; 1886 to 1889 in the United States Indian Service in South Dakota; died at his home, December 6, from angina pectoris.

George Amos Harman, Lancaster, Ohio; Medical College of Ohio, Cincinnati, 1871; Bellevue Hospital Medical College, 1874; aged 77; physician to the Ohio State Reform School, Lancaster, from 1874 to 1878; surgeon to the Sixth Battalion, Ohio State Militia, in 1875 and 1876; medical director of the Department of Ohio, G. A. R., in 1877 and 1888; died at his home, March 4, from heart disease.

William Robert Arlington Carley, Brooklyn; Bellevue Hospital Medical College, 1888; aged 55; a member of the Medical Society of the State of New York; a member of the staff of Bethany Deaconess, Bushwick Central, Long Island College, and Brooklyn hospitals; died in Long Island College Hospital, March 11, a week after an operation for the removal of an enlarged gland.

Osee Wallace Hoffman, Denver; Laura Woman's Medical College, Cincinnati, 1897; aged 43; assistant clinical professor of ophthalmology in the Denver and Gross College of Medicine, and chief of the eye and ear department of the Women's Free Dispensary, Denver; died in Mercy Hospital, Denver, March 5, from tuberculosis.

Alonzo H. Mackey, Gorin, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; aged 60; a member of the Missouri State Medical Association; while driving in his automobile, March 7, over a grade crossing of the Sante Fe System, near Gorin, was struck by a freight train and instantly killed.

Jarvis Mitchell Howes ⊕ Sellersburg, Ind.; Kentucky University, Louisville, 1893; aged 57; for many years a druggist at Jeffersonville; while driving his automobile over a grade crossing of the Baltimore and Southwestern Railway, near Prather, March 5, was struck by a passenger train and almost instantly killed.

Charles W. Birdsall, Weavers, W. Va.; College of Physicians and Surgeons, Baltimore, 1885; aged 67; at one time a member of the Medical and Chirurgical Faculty of Maryland; died in the Davis Memorial Hospital, Elkins, W. Va., February 11, from pneumonia following influenza.

William Burt, Paris, Ont.; University of Toronto, Ont., 1870; aged 70; president of the Ontario Medical Association in 1905; and a member of the Ontario Board of Medical Examiners from 1889 to 1892; died at his home March 14, from pulmonary tuberculosis.

Wilford Wayne Martin ⊕ **Lieut., M. C., U. S. Army,** Kirksville, Mo.; Eclectic Medical University, Kansas City, Mo., 1903; aged 41; on duty with the American Expeditionary Forces at Rouen, France; was thrown from his horse and instantly killed, December 4.

Homer Earl Gordon, Lansing, Mich.; Saginaw Valley Medical College, Saginaw, Mich., 1898; aged 64; at one time a member of the Michigan State Medical Society; for two years superintendent of schools of Tuscola County, Mich.; died at his home, March 4.

Alpha Mason Whiton, U. S. Indian Service, Fort Totten, N. D.; Hahnemann Medical College, Philadelphia, 1881; aged 61; on duty at the Indian School and Hospital at Fort Totten; died at that place, February 24, from pneumonia and angina pectoris.

Winfield March White ⊕ **Lieut., M. C., U. S. Army,** Sioux City, Iowa; State University of Iowa, Iowa City, 1912; aged 29; on duty with the American Expeditionary Forces in France; was killed in action, November 4, at Bazancourt Farm, France.

Harry Augustus Scheppach ⊕ **Lieut., M. C., U. S. Army,** Newark, N. J.; Bellevue Hospital Medical College, 1898; aged 43; on duty at the Yale Army Laboratory School, New Haven, Conn.; died in New Haven, January 29, from typhoid fever.

James H. Carter, Seymour, Ind.; University of Louisville, Ky., 1879; aged 70; at one time a member of the Indiana State Medical Association; secretary of the Seymour Board of Health; died at his home, March 10, from cerebral hemorrhage.

William James Bulgar ⊕ Oswego, N. Y.; Long Island College Hospital, Brooklyn, 1882; aged 61; consulting physician to the Oswego Hospital; collector of the port for four years; mayor of Oswego in 1893; died at his home, March 3.

John L. Caldwell, Waverly, Ohio; Cincinnati College of Medicine and Surgery, 1874; aged 75; a member of the Ohio State Medical Association; physician to the Pike County Children's Home; died at his home, March 7.

Arthur Lee Cunningham ⊕ Oakland, Calif.; Hahnemann Medical College, Pa., 1890; aged 52; chief surgeon to Fabiola Hospital, Oakland; at one time a member of the Oakland Board of Health; died at his home, March 3.

Ellenwood Bunker Coleman, Nantucket, Mass.; Chicago Homeopathic Medical College, 1888; aged 56; for three years representative from Nantucket in the state legislature; died at his home, February 27, from angina pectoris.

Ellsworth Hazen Noble ⊕ Elmira, N. Y.; New York Homeopathic Medical College, New York City, 1890; aged 53; a specialist on diseases of the eye, ear, nose and throat; died at his home, March 6, from acute gastritis.

John Vinson Brann, Knoxville, Iowa; Medical College of Ohio, Cincinnati, 1881; aged 65; local surgeon of the Rock Island System; at one time a member of the Iowa State Medical Society; died at his home, March 8.

Alexander Rhea Kuykendall, Dayton, Texas; Missouri Medical College, St. Louis, 1885; aged 59; a member of the State Medical Association of Texas; died in a sanatorium in Waco, Texas, February 17, from paresis.

Solomon Charles Mish, San Francisco; Kentucky School of Medicine, Louisville, 1892; aged 50; formerly professor of therapeutics in the West Coast Medical College in San Francisco; died at his home, March 2.

Charles Haight Holcombe ⊕ **Lieut., M. C., U. S. Army,** Trenton, N. J.; Jefferson Medical College, 1901; aged 51; a specialist in roentgenology; for several years a druggist of Trenton; died at his home, March 5.

Sarah Lamb Cushing, Lockport, N. Y.; Starling Medical College, Columbus, Ohio, 1859; aged 100; one of the first women to take up medical practice in the United States; died at her home, March 12.

William Crooks Hertzler ⊕ Toledo, Ohio; Jefferson Medical College, 1894; aged 54; died in his office, March 7, from an overdose of an opiate taken to relieve pain, following an operation on his nose.

Herman Vedder Mynderse ⊕ Schenectady and Scotia, N. Y.; Albany (N. Y.) Medical College, 1889; aged 57; attending physician to the Ellis Hospital, Schenectady; died at his home, March 5.

⊕ Indicates "Fellow" of the American Medical Association.

Charles Olaf H. Nordwall ⊕ Rockford, Ill.; John A. Creighton Medical College, Omaha, 1906; aged 47; died in the Michael Reese Hospital, Chicago, March 7, from chronic interstitial nephritis.

Charles W. Hedrick, Willard, Ohio; Columbus (Ohio) Medical College, 1883; aged 55; for thirty-five years medical examiner for the Baltimore and Ohio System; died at his home, March 7.

Walton W. French, Chattanooga, Tenn.; New York Homeopathic Medical College, 1875; aged 83; a veteran of the Civil War; died at his home, February 24, from cancer of the face and neck.

Henry Crawford Walker, Hockessin, Del.; Jefferson Medical College, 1891; aged 64; for several years a druggist of Philadelphia; died at his home, March 2, from heart disease.

Frederick B. Palmer, Atlanta, Ga.; Southern Medical College, Atlanta, 1883; aged 80; a Confederate veteran; for many years a pharmacist of Atlanta; died at his home, March 13.

Henry Peffer, Summit, N. J.; New York University, New York City, 1883; aged 71; formerly a member of the staff of the Manhattan State Hospital; died at his home, March 8.

William Pugh Haynes, Clarksville, Tenn.; formerly of Oakwood, Tenn.; University of Tennessee, Nashville, 1894; aged 60; died at his home, February 26, from pneumonia.

George Loring Porter ⊕ Bridgeport, Conn.; Jefferson Medical College, 1862; aged 80; surgeon of U. S. Volunteers during the Civil War; died, February 17, in Stuart, Fla.

Robert Clemens Smedley, Denver; Denver College of Medicine, 1900; aged 47; at one time a member of the Colorado State Medical Society; died at his home, March 1.

Wiley B. Finney, Pelham, Ga.; University of Georgia, Augusta, 1891; aged 59; died at the home of his daughter near Ty Ty, Ga., February 4, from pneumonia.

John Henry Myers, Lewistown, Pa.; Baltimore Medical College, 1883; aged 78; a veteran of the Civil War; died at his home, March 6, from cerebral hemorrhage.

Joseph Levi Hogan ⊕ Oregon, Mo.; Ensworth Medical College, St. Joseph, Mo., 1909; aged 35; died in a hospital in St. Joseph, March 12, after a surgical operation.

John Manson, Lincoln, Calif.; University of Victoria College, Corburg, Ont., 1866; aged 80; a resident of California since 1869; died at his home, February 28.

Everett White ⊕ East Lynn, Mass.; College of Physicians and Surgeons, Baltimore, 1897; aged 48; died in Roxbury, Boston, February 27, from tuberculosis.

George W. Tepe ⊕ Evansville, Ind.; Hospital College of Medicine, Louisville, Ky., 1893; aged 47; died in Evansville, December 8, from surgical shock.

Jacob May, Bridgeport, Conn.; Rush Medical College, 1876; aged 68; a member of the Connecticut State Medical Society; died at his home, February 23.

Raymond B. Houston ⊕ Seneca, Kan.; Central Medical College of St. Joseph, Mo., 1905; aged 36; died at his home, February 10, from pneumonia.

Harrison M. Bennett, Takoma Park, Md., and Washington, D. C.; Howard University, Washington, D. C., 1882; aged 75; died at his home, February 26.

Ernest Freeman Norcross, Boston; Boston University School of Medicine, 1892; aged 67; died at his home, Dorchester, Boston, March 3.

Gustav C. Fichtner, San Francisco; Hahnemann Medical College of the Pacific, San Francisco, 1887; aged 71; died at his home, March 12.

John C. Tillman, Sidney, Ohio; Medical College of Ohio, Cincinnati, 1877; aged 64; died in his apartment, March 2, from heart disease.

Robert Sidney Hendry, Taylor's Creek, Ga.; University of Georgia, Augusta, 1899; aged 49; died in a hospital in Savannah, February 10.

William A. Hubbard, Cedar Rapids, Iowa; Hahnemann Medical College, Chicago, 1885; aged 64; died at Battle Creek, Mich., March 11.

Edward Rawlins Tarry, Omaha; University of Maryland, Baltimore, 1893; aged 46; died at his home, March 7, from pneumonia.

Basil M. Webster, Council Bluffs, Iowa; Rush Medical College, 1869; aged 71; died at his home, March 6, from heart disease.

Thompson R. Brady, Wabash, Ind.; Rush Medical College, 1869; aged 75; died at his home, March 10.

Correspondence

CASE OF LETHARGIC ENCEPHALITIS

To the Editor:—With reference to the editorial in THE JOURNAL, March 15, on lethargic encephalitis, a brief report of a recent case under my observation may be of interest:

A woman, aged 40, married, mother of two children, in good health, was first seen by me, February 15, soon after she began to experience profound and constant drowsiness. Both levator palpebrae muscles were partially paralyzed, so that both lids remained half closed. Pulse, respiration, temperature and pupils were normal. In the earlier part of the attack, slight elevation of temperature—from 99 to 100—was occasionally noted. There was no photophobia and no pain. The urine was normal. There was no coma. The patient was easily aroused, but on one or two occasions she manifested temporary confusion of ideas.

Neither the patient nor any member of her immediate family has had influenza. A sister and her husband, living in an adjoining house, both had influenza, one early in October last and the other three months later, and influenza had prevailed here for five months preceding her illness.

No appreciable cause can be assigned for this attack, which continued, in gradually decreasing intensity, for one month, ending in recovery. During her confinement, she gained several pounds in weight.

Treatment consisted of rest in bed, a liberal diet, repeated cathartics, caffein freely, some quinin and, later, moderate doses of strychnin.

JAMES B. BAIRD, M.D., Atlanta, Ga.

STANDARDIZATION OF DEGREES IN PUBLIC HEALTH

To the Editor:—In view of the importance of arriving at some measure of standardization for the various degrees and certificates offered in the field of public health, Yale University invited a group of representatives from neighboring universities to confer in regard to the matter at New Haven, Feb. 28, 1919. Johns Hopkins University was represented by Dr. W. H. Welch, the Massachusetts Institute of Technology by Prof. W. T. Sedgwick, Harvard University by Dr. M. J. Rosenau, New York University by Dr. W. H. Park, and the University of Pennsylvania by Dr. H. F. Smyth, while Yale University was represented by a special committee from the Graduate School, including Profs. S. E. Barney, L. B. Mendel, L. F. Rettger, M. C. Winternitz and C.-E. A. Winslow.

After very full discussion of the various points involved, the following resolutions were unanimously adopted:

1. That the degree of Doctor of Public Health (for which the abbreviation should be Dr.P.H.) for graduates in medicine should normally be awarded after two years of work done under academic direction, of which one year at least should be in residence and that the requirements for the degree should include class work, practical field work, and an essay based on individual study of a particular problem.

2. That the degree of Doctor of Philosophy or Doctor of Science in Public Health or Hygiene should be conferred on students who hold the bachelor's degree from a college or technical school of recognized standing, and have satisfactorily completed not less than three years of graduate study. It is understood that this degree is based on the fundamental sciences associated with hygiene and public health, including a knowledge of physics, chemistry, general biology, anatomy, physiology, physiologic chemistry, pathology and bacteriology, in addition to the thesis and other usual requirements for the Ph.D. or Sc.D. degree.

3. That the Certificate in Public Health should be granted for not less than one academic year of work to those who have received a bachelor's degree from a recognized college or technical school, or have satisfactorily completed two years of work in a recognized medical school, provided they have previously pursued satisfactory courses in physics, chemistry, general biology and general bacteriology.

4. That the degree of Bachelor of Science in Public Health or Hygiene should be given for the completion of a four years' course, the last two years of which have been devoted to the fundamental sciences associated with hygiene and public health or hygiene.

5. That the authorities having the appointment of health officials be urged to give preference so far as possible to persons holding degrees or certificates in public health or hygiene.

I am submitting this minute for publication in THE JOURNAL with the thought that the conclusions reached might be of some interest to other workers and teachers in the field of public health.

C.-E. A. WINSLOW, New Haven, Conn.

THE INJURY TO CANCER PATIENTS OF SECURING SPECIMENS PRIOR TO OPERATION

To the Editor:—The practice of securing specimens for microscopic examination from suspected malignancies prior to operative or other radical treatment has often been denounced. The consequences of this practice can be readily appreciated by a moment's reflection. The lymphatics are active and the vessels enlarged in the neighborhood of cancerous growths, and the cellular tissue about the mass is both hyperemic and edematous, ready to take up, harbor and transport fluids carried to them. It needs only a puncture, an abrasion, a bruise or a pinching of the growth to carry from it to its immediate environment the morbid agencies therein generated—causative factors of its malignancy. Much more mischief is done if an actual incision is made into the mass. It is an error to suppose that by employing a cautery for the removal of such fragment, however small, danger is avoided. If a dull red knife is used, the specimen is so coagulated as to be useless for examination, and the white hot cautery lays open the paths of exit into the system almost or quite as well as a clean cut.

The antagonistic forces of nature to infecting organisms are continually and for protracted periods effectively at work walling off and fighting back detrimental agencies. Whether a cell or a germ, Nature opposes it successfully for a long time before exhausting its means of constitutional protection. To mutilate the nidus of mischief to the smallest extent is to precipitate an attack on its environment, and opens to its ravages every part of the body; for immediately on the disruption of the continuity of its structure, the blood stream —capillary, arterial and venous—commences the deportation of its virus therefrom with a rapidity and efficiency sufficient to carry to the remotest portion of the anatomy, there to be deposited for the reproduction of malignancy. The lymphatics next play their rôle in the work of devastation. They are slower but more certain as carriers than the blood stream. A further method by which cancer is propagated after incision is through the breaking down of the barriers to the contiguous tissue. These, though usually more or less infiltrated with cancer-producing organisms, have previously been so protected by the efforts of Nature as to retard, if not actually arrest, the progress of the disease. But the blocked channels are reopened by incision. This is well exemplified when, after operation for the radical removal of cancer, a line of malignant neoplasms is seen to spring up wherever the knife has been drawn, and explains the rapidity of so many postoperative recurrences. We must not forget, therefore, that however minute the specimen removed, the avenues to constitutional contamination will be immediately opened and general metastasis result.

It is inexcusable for a physician to find it necessary to verify his diagnosis by the aid of the pathologist. If he deems it advisable, either for corroborative evidence in his own scientific work as to the nature of the malignancy, or in order to prove to his associates or patient the correctness of his diagnosis, let him leave this investigation until after the removal of the growth. It is difficult to believe that a diagnostician of experience can be capable of error in pronouncing the verdict of cancer or no cancer in any given instance. There are but few conditions which so simulate cancer as to mislead an experienced operator, and these, as in the case of syphilis, can usually be eliminated by treatment with but little or no more procrastination than is often required in awaiting the report from a pathologic laboratory. It must not be forgotten, also, that while much light may be thrown on the precise nature of malignancy by the findings of the microscope, this instrument is often misleading and should not be relied on unquestioningly.

EVAN O'NEILL KANE, M.D., Kane, Pa.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TECHNIC OF DARK FIELD ILLUMINATION

To the Editor:—In THE JOURNAL, March 8, Major J. V. Klauder speaks of the dark field test in the early diagnosis of syphilis. Can you give me the technic, or tell me where I can find it?

S. C. CLARKE, M.D., Albuquerque, N. M.

ANSWER.—In the system of microscopic inspection termed dark ground illumination, the objects are examined by reflected light. An object appears to be self luminous against a dark field. In lighting the field, rays of great obliquity are used so that only such rays traverse the objective as are deflected from some object in the field. The value of the method lies in the fact that particles may be rendered visible which are wholly invisible with a microscope as ordinarily used. In examining for the organisms of syphilis by this method, only the spirochetes are visible. As described in Guyer's Animal Micrology (University of Chicago Press, 1917, p. 201), the method of employment is somewhat as follows: For low powers without a condenser, the diaphragm of the microscope must be wide open, and the mirror so tilted that the object is lighted by oblique rays which cannot get directly into the front lens of the objective. With a condenser, a central stop diaphragm is used which admits only marginal rays. For high powers, according to one system, very wide apertures are necessary in the condensers. Some makers use specially modified condensers; others substitute a parabolic reflector for the condenser. In another method, the field is lighted from one side at right angles to the axis of the microscope by a wedge or zone of bright light. In another method, useful for both high and low powers, an objective of wide aperture and a condenser of moderate aperture are employed. The field is lighted as in ordinary microscopy by a zone of light from the condenser, but a diaphragm or stop of the right size to cut out the central rays of light is placed on the back lens of the objective. In this way only those rays which have entered the marginal zones of the objective pass on to form an image, and among these are the rays which have been deflected by objects in the field.

Roddy (Medical Bacteriology, Philadelphia, P. Blakiston's Son & Co., 1917, page 12) suggests the following method of preparing a specimen of fluid or scraping from the lesion for dark field illumination: The lesion should not be washed or dressed with any antiseptic for at least twenty-four hours. About six hours before obtaining the specimen, the lesion should be gently cleansed with physiologic sodium chlorid solution and covered with a gauze dressing moistened with the same solution, which is not to be disturbed until the material for examination is collected. From macules, papules and ulcers the material can be collected with straight capillary glass tubes about 6 inches long. Fluid from enlarged glands is withdrawn with a syringe. Examination should be made as soon as possible, and not later than an hour after the specimen is collected. A drop of warm, sterile physiologic sodium chlorid solution is placed on the center of each of a number of perfectly clean slides, and a drop of the fluid or scrapings to be examined is mixed with it, forming a thin film free from air bubbles and occupying the entire space between the slide and the cover glass. The prepara-

tions are luted with melted petrolatum or paraffin, a drop of immersion oil is placed on the dark field condenser, and the slide is placed on it. Another drop of immersion oil is placed on the cover glass, and the oil immersion lens brought in contact with it. Details of the technic will vary with different operators. For a full dicussion of dark ground illumination, A. E. Wright's "Principles of Microscopy," New York, the Macmillan Company, Chapter XIV, may be consulted.

LITERATURE ON PYORRHEA ALVEOLARIS

To the Editor:—Will you kindly recommend a recent book on pyorrhea? I prefer a book that treats this subject exclusively.

FREDERICK BOOTH, LaPorte, Ind.

ANSWER.—The following books may be consulted:

Bass and Johns: Pyorrhea Alveolaris, Philadelphia, W. B. Saunders Company, $2.50.

Hecker: Pyorrhea Alveolaris, St. Louis, The C. V. Mosby Co., $2.

Talbot, E. D.: Interstitial Gingivitis and Pyorrhea Alveolaris, Toledo, Ransom and Randolph Co., $4.

Book Notices

MANUAL OF SURGICAL ANATOMY. Authorized by the Secretary of War and under the Supervision of the Surgeon-General and Council of National Defense. Prepared under the Direction of the Division of General Surgery in Collaboration with the Divisions of Orthopaedic Surgery, Surgery of the Head, Genito-Urinary Surgery and the Advisory Staff in Surgery in the Office of the Surgeon-General, U. S. Army. Cloth. Pp. 387, with illustrations. 1918.

This manual was prepared for the use of the medical departments of the Army and Navy. As its preparation was essentially a war measure, to use a trite phrase, it was not difficult to obtain the permission of various medical publishers for the reproduction of illustrations that appeared in their publications. The book is divided into four parts covering the divisions of the body, and the subjects have been presented in the following order: (*a*) transparencies or projections showing the deeper structures viewed in their natural positions as though the overlying structures were transparent; (*b*) systematic dissections; (*c*) regional dissections; (*d*) frontal, sagittal and transverse sections, and (*e*) surgical incisions. The international Basle nomenclature is used, and an explanatory index gives the equivalents for these terms. Most of the work was done in the department of anatomy of the University of Illinois. The compilers of the book have borrowed extensively from the best anatomic works available today in all modern languages, using freely those texts under Allied control and, at the same time, many German and Austrian textbooks. There are 327 pages of especially selected illustrations well printed on enamel paper. The result is an almost invaluable anatomic work. The civil sale of the manual is prohibited, its use being restricted to the Army and Navy. This is unfortunate, since the work would undoubtedly be of the greatest service to medical students. It is to be hoped that some arrangement may be made whereby at least several copies may find their way to the anatomic laboratories of our medical schools.

FORCED MOVEMENTS, TROPISMS, AND ANIMAL CONDUCT. By Jacques Loeb, M.D., Ph.D., Sc.D., Member of the Rockefeller Institute for Medical Research. Cloth. Price, $2,50 net. Pp. 209, with 42 illustrations. Philadelphia: J. B. Lippincott Company, 1918.

The present volume is the first of a series of monographs on experimental biology to be written by American biologists under the general editorship of Jacques Loeb, T. H. Morgan and W. J. V. Osterhout. It embodies the author's conceptions respecting the nature of animal conduct. As many biologists are aware, animal conduct was explained by this author on the tropism theory some thirty years ago. In the course of years, many extensions have been made to this theory by himself and others. The book gives a brief but clear-cut summary of the entire subject as it stands today.

Not since the appearance of Descartes' treatise on man in the seventeenth century have such purely mechanistic ideas of animal conduct been so openly expressed as in this book. To be sure, Descartes constructed the machinery of the animal body and of man to suit his fancy, and endowed the latter with a soul to regulate its activity. In the last analysis, the machine of Descartes and that of Loeb are essentially the same. Both looked at the body as a whole so constructed that its every movement is the inevitable result of some form of stimulation. The seventeenth century philosopher deduced his conceptions of the body's activity from a consideration of a few anatomic facts and factitious assumptions; the modern experimentalist bases his convictions on a close quantitative study of the reactions of animals to light, galvanic currents, chemicals, heat, etc., to which animals are subjected. In the judgment of Loeb, the conduct of animals, including man, is nothing more nor less than the expression of tropistic reactions. To both the body represents merely a machine so constructed that its responses to a given stimulation are in most instances predictable. And whereas Loeb dispenses with a governing .soul, Descartes defended his position in this respect with more wisdom, possibly, than conviction.

The lucid discussion of the various tropistic reactions prepares the ground for a discussion of instinct and memory images in the final two chapters of the book. In the former, dealing with instinct, the importance of sex hormones (particularly) are admitted to modify tropistic reactions. The discussion in the final chapter of memory images from a tropistic point of view is less complete and convincing. Data are lacking, as are methods for obtaining them. Learning, according to the author, presupposes associative memory, whose physical mechanism is again admittedly unknown. Nor is Loeb's position strengthened by stating that the conditioned reflexes or memory images of Pawlow are the cause of the variations and multiplication of possible tropistic reactions. The intangibleness of this memory image, and added special tropism, as a source of forced orientation fails absolutely to convince the verbalist, anthropomorphic author, or scientist; for when Loeb attempts to explain apparent free will of animals and man in the government of their actions by the tropistic effects of memory images, and the modification and inhibition of tropisms by memory images, both mechanists and vitalists will ask for his conceptions as to the physical or chemical nature of these memory images. His hypothesis as to the nature of so-called free will or premeditated acts is scientifically weak because it lacks data. Aside from this, the book contains much on animal conduct and its explanation that ought to be more generally known by biologists, and particularly by psychologists.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 1. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

ARKANSAS: Little Rock, May 13. Sec. Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Ft. Smith; Sec. Regular Bd., Dr. T. J. Stout, Brinkley.

COLORADO: Denver, April 1. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

FLORIDA (H): Jacksonville, April 8. Pres., Dr. Chas. W. Johnson, 33 E. Monroe St., Jacksonville.

IDAHO: Pocatello, April 1-2. Sec., Dr. Ray H. Fisher, Rigby.

MINNESOTA: Minneapolis, April 1-4. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

MONTANA: Helena, April 1. Sec., Dr. S. A. Cooney, 205 Power Bldg., Helena.

NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEVADA: Carson City, May 5. Sec., Dr. S. L. Lee, Carson City.

NEW MEXICO: Sante Fe, April 14-15. Sec., Dr. W. E. Kaser, East Las Vegas.

OKLAHOMA: Oklahoma City, April 8-9. Sec., Dr. J. J. Williams, Weatherford.

RHODE ISLAND: Providence, April 3-4. Sec., Dr. B. U. Richards, State House, Providence.

UTAH: Salt Lake City, April 7-8. Sec., Dr. G. F. Harding, Templeton Bldg., Salt Lake City.

Medicolegal

Intent and Revocation of License in Abortion Case

(Rodermund v. State (Wis.), 168 N. W. R. 390)

The Supreme Court of Wisconsin, in affirming a judgment of conviction of defendant Rodermund of having used instruments in the treatment of a pregnant woman with intent to procure a miscarriage as denounced by the provisions of Section 4583 of the Wisconsin Statutes, says the defendant insisted that the trial court erred in submitting the question of his guilt or innocence to the jury, and asserted that the evidence did not sustain the charge preferred against him of having used instruments on the person of a pregnant woman with the intent to produce a miscarriage. The defendant testified in substance that he found the woman in process of miscarriage, that he rendered proper medical aid for such condition, that he did nothing to produce a miscarriage, that his treatment of her was for alleviating her serious condition and to protect her life, that he did nothing to prevent publicity of his connection with or treatment of her case aside from what proper professional conduct demanded of him in compliance with her wishes, that all of his professional services were rendered for the purpose of giving her proper medical care, and that he had no intent to do anything to procure a miscarriage. The proper inference from the evidence was necessarily dependent on the credibility and weight which was given to the statements of the various persons who testified. The case was therefore one wherein the jury and the trial court that saw the witnesses on the stand and observed them while testifying could much better ascertain the probative force of the evidence than could be ascertained by a review of the printed record. The facts and circumstances shown were as to their significance, and the inferences to be drawn therefrom as to the defendant's guilt or innocence were peculiarly within the function to be exercised by the triers of fact. The offense charged involved the inquiry: With what intent did the defendant give this woman the treatment he testified to? Such intent was a fact which must be ascertained from a consideration of the circumstances which threw light on the defendant's acts. If he had the felonious intent of producing a miscarriage, then guilt was established though he did not in fact procure a miscarriage.

The circuit court sentenced the defendant by the imposition of a fine and the costs of the action, and, in default of the payment of such fine and costs, committed him to the county jail for a period not to exceed six months. It also adjudged a revocation of the defendant's license to practice medicine and surgery, applying the provision of Section 1435 i of the statutes that:

> . . . If any person licensed or registered by said board shall be convicted of any crime, committed in the course of his professional conduct, the court in which such conviction is had shall in addition to any other punishment imposed pursuant to law revoke said license or certificate.

It was held in *State* v. *Lewis,* 164 Wis. 363, 159 N. W. 746, that the effect of this statute is simply to give, as an incident to such conviction, power to the court in the criminal proceeding to do directly and forthwith what might be done in subsequent civil proceedings. The supreme court is persuaded that this interpretation of the statute is correct, and hence the contention of the defendant that it provides additional criminal punishment and that it constitutes cruel and unusual punishment was without merit. The term "crime," as used in this provision, was manifestly employed to embrace the violation of any penal law of the state, and clearly includes all felonies and misdemeanors under the law of the state committed by the offender in the course of his professional conduct. The terms of the statute leave no room for different interpretation of the word "shall" in the provision that the court on record of conviction "shall" revoke the license or certificate of the person convicted. It is apparent that the legislature intended that a criminal conviction of any such licensed or registered person shall be deemed to be a conclusive test of unfitness to continue further in the practice of his profession, and made it mandatory on the court to revoke such license. This is properly a legislative question.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 9-13.

Alabama State Medical Association, Mobile, April 15.
American Association of Anatomists, Pittsburgh, April 17-19.
American Physiological Society, Baltimore, April 24-26.
Arkansas Medical Society, Little Rock, May 20-22.
Connecticut State Medical Society, Bridgeport, May 21-22.
Florida Medical Association, Miami, May 21-23.
Georgia State Medical Association, Atlanta, April 17.
Illinois State Medical Society, Peoria, May 20-22.
Iowa State Medical Society, Des Moines, May 7-9.
Kansas Medical Society, Ottawa, May 7-8.
Louisiana State Medical Society, Shreveport, April 8-10.
Maryland, Medical and Chir. Faculty of, Baltimore, April 22-24.
Michigan State Medical Society, Detroit, May 21-22.
Mississippi State Medical Association, Hattiesburg, May 13-14.
Nebraska State Medical Association, Lincoln, May 19-21.
New Hampshire Medical Society, Concord, May 14-15.
New York State Medical Society, Syracuse, May 6.
North Carolina State Medical Society, Pinehurst, April 15.
Ohio State Medical Association, Columbus, May 6-8.
Oklahoma State Medical Society, Muskogee, May 20-22.
South Carolina Medical Association, Florence, April 15-16.
Texas State Medical Association, Waco, May 13-15.

JOINT SESSION OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES AND THE FEDERATION OF STATE MEDICAL BOARDS

(Concluded from page 892)

The Desirability of Changing the Type of Written Examinations

DR. GEORGE BLUMER, Dean of Yale University School of Medicine, New Haven, Conn.: To be published in full in THE JOURNAL.

Advisability of Combining Examinations of the National Board, State Boards and Medical Schools

DR. JOHN S. RODMAN, Secretary of the National Board of Medical Examiners, Philadelphia: During the past three years the National Board of Medical Examiners has sought to develop an ideal examination for determining the fitness of a candidate to practice medicine. In doing so the board has sought for principles to govern its future action rather than to examine large groups of applicants. As predicted by the founder of the board, the examination is adapted more to the exceptional than to the average applicant.

The board has tried to steer between technicality, on the one hand, and laxity, on the other. It has recognized the necessity of giving an examination sufficiently thorough to be recognized by state examining boards, and yet to make it of so practical a nature that a qualified candidate has a reasonable chance of passing it. Figures will show that the latter aim has been accomplished, since 80 per cent. of those who were qualified to enter the examination have received certificates. The board believes that the state boards' approval is being obtained. The board has endeavored to determine the fitness of a candidate to practice up-to-date medicine, rather than to pass on his special knowledge in any one specialty.

As time goes on, this board may be in a position to offer suggestions in regard to methods of teaching certain subjects.

The dean of one of our medical schools suggests that the examinations of the national board be combined with the final examinations of medical schools, the thought being that the national board's examination might be accepted by the school in lieu of its own final examination. After careful consideration, the board decided that while the plan had many merits, this was hardly the field which the national board had been created to enter. The final examination of a medical school, leading as it does to a degree, must be more or less academic in character, while that of the national board must determine the ability of the candidate, once having received the degree, to apply his knowledge to

actual practice. Furthermore, the board requires a year of hospital work as intern after graduation, as a prerequisite to candidature for its examination.

DISCUSSION ON EXAMINATIONS

DR. JOHN M. DODSON, Chicago: It is extremely important and desirable that there should be some examination which could be taken by the young man entering the profession of medicine, which will insure him for all time the right to practice anywhere in this nation, without the distressing embarrassment of finding himself in middle life or later obliged to move from one state to another and to submit to a technical examination in branches from the study of which he has long been removed, and which acts as an effectual barrier against his transferring to another state.

Those of us who have had to do with administration of medical schools know in many instances of the hardships imposed by our impossible system of state licensure without reciprocity which have been forcibly brought to our minds. One of the worst features of reciprocity agreements has been the ridiculous "I will if you will" attitude of the various boards. About ten years ago, it was discovered that one state had examined one sixth of all physicians who in that year were licensed by reciprocity in the United States. Young men were taking examinations in that state because they were easy to pass, and were then obtaining their licenses by reciprocity in the states where they intended to practice. The other states put a stop to that practice by adopting a rule that no license would be granted by reciprocity to a practitioner of another state until he had practiced at least one year in the state where he secured his original license. The officials of the first board concerned were apparently very wrathful at this and came back with a ruling demanding two years of practice. In that state a young man could not get a license unless he had been practicing for two years in another state. About two months ago a graduate of Rush Medical College was offered a desirable position in a certain state with an industrial concern. He had been in practice about eighteen months. The board of the state to which he wanted to go first had the rule of one year, but it says that "we cannot accept a man unless he has been in practice for two years because the other state requires two years, but if that state will change its rule to one year we will admit this man." The other state stood pat, so the young man could not move to that state. He was willing to take the examination, but no examination was to be held for four months; hence he was debarred from accepting a desirable position because of this ridiculous attitude of a state board. This is one of many instances just as absurd which are working a serious and unjustifiable hardship on physicians.

I do not think we desire universal reciprocity. With the wide divergence of standards in the forty-eight states, we should not gain if we had universal reciprocity. I can see no solution of this difficulty except through some agency like the National Board of Medical Examiners, and its progress in the last two or three years in the direction of better examinations entirely commands my confidence. I hope to see the time when the acceptance of its certificate will be universal in this country, and when the earnest young men desirous of securing licenses can go anywhere at a minimal expense and with little trouble. I hope the board will find it possible to hold three or four simultaneous examinations in different cities, for that will be necessary if the students are to take them.

DR. B. D. HARISON, Detroit: It would be very foolish, when a candidate has a certificate from the National Board of Medical Examiners and goes into a state with the idea of practicing, for members of the state board to put him through the whole formula of passing another examination, when the examination he has already passed is more rigid and far superior to that which is provided by the state. I think other methods might be used in such cases; I am quite sure they can be, so that in effect the certificate of the national board should be recognized in all states. A number of states have already recognized it. I do not think any one would be sufficiently interested in a case of this kind to bring suit against the state board to prevent its recognition. There would be nothing in it for the man who prosecutes; he would not help himself or help anybody else.

The great weakness of the national board is its administration, particularly in the evaluation of credentials. If the board would use open methods of administration I think it would raise the standard to a very large extent. Very few of the state boards at present administer their preliminary requirements. They do not seem to know how. There is more care required in the administration of preliminary credits than in any other administration policy. It is a profession in itself, and there should be uniformity in administrative methods in regard to that. It would do a tremendous amount of good.

I had the privilege of attending the examination of the national board in New York a year ago, and I must say from my experience there that the examination was ideal. I do not know of any examination that is so thorough and yet so fair, and any graduate of a first class medical college should be able to pass this examination.

DR. ISADORE DYER, New Orleans: The question of cooperation of the national board with the examinations of students graduating from medical schools, examinations for internships, and with state board examinations, is one that for some time in the future probably could not be made practicable. The purposes of the National Board of Medical Examiners should be reviewed. When created, it was intended to offer an examination which would be more or less academic, which should test the exceptionally qualified candidate, and which should certify him, if found qualified, to any one who might be concerned. The board demanded graduation from an acceptable high school; two years of college work which would include the sciences required by the Council on Medical Education in its published requirements; graduation from a Class A school, and an internship in an acceptable hospital. It has not been the board's function to consider any other examination. The board is interested in the general problem of medical education. It has assumed no attitude of leading in the problems which are before this body, but desires to have a part in the consideration of the problems that are arising. The state boards have not yet standardized their own examinations; not all of the states have yet come into the membership of the Federation of State Boards. It would be a presumption on the part of the National Board of Medical Examiners to hold an examination qualifying for a state board unless the initiative in this regard came from that board.

DR. THOMAS MCDAVITT, St. Paul: I have had the great pleasure of being present at three examinations of the national board, and they impressed me very favorably. It was unfortunate, so far as the national board is concerned, that it could not be legalized by the national government. Could that have been done, every state would have accepted its certificates. I think its examinations are more difficult than any I have ever attended. No state board has an examination that compares with it. Unfortunately our law in Minnesota was so stringent as regards its verbiage that we could not accept the examination of the national board; but we have bills in both houses of the legislature at present providing for an amendment to our law, whereby we shall be enabled to accept the examinations of the national board on the same basis that we accept those of other states in the matter of reciprocity.

W. C. RUCKER, Major, M. C., U. S. Army, Newport News, Va.: In examining a man we should bear in mind what we are examining him for. If it is to find out whether he is a scientist, he should be given one type of examination. If it is to find out whether he can treat sick people, you must give him another type of examination. There is one thing however, which he is not examined in, and that is his temperamental fitness to practice medicine. We should determine a man's ability to meet an emergency. Almost any one can examine a patient, go home and read up on the subject, find out what to do and blunder along, but it takes a good man to meet an emergency. The United State Public Health

Service a few years ago undertook to put into practice a test more or less psychologic which would in a measure determine the temperamental fitness of men, and it was surprising to see the number of men who were found unfit.

DR. JAMES EWING, New York: I had the opportunity to see some of the examinations conducted by the national board in New York, and I can say that the experience of passing through such an examination is a liberal education in itself. I think this board is doing much toward maintaining and even raising the standard of medical education in this country. Its theoretical conception, its philosophy, is entirely sound. Up to the time of the war in Europe, it is a fact that the medical schools provided a very considerable number of men who entered the other sciences and became prominent in them; but in this country the medical schools did not provide enough men to teach the sciences to medical students. There are few prominent teachers of anatomy in this country who hold medical degrees. Some of them have honorary degrees. The same situation exists with regard to physiology. Medical schools have not provided sufficient men to teach their own students the fundamental sciences of medicine.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March, 1919, **17**, No. 3

*Epidemic Influenza in Infants. M. Wollstein and A. Goldbloom, New York City.—p. 165.
*Unusual Case of Aplastic Anemia. L. W. Smith, Boston.—p. 174.
*Relation of Parental Nativity to Infant Mortality in New York State. P. R. Eastman, Albany.—p. 195.
*Simple Method of Modifying Fat Content of Milk for Infant Feeding. A. L. Daniels and H. English, Madison, Wis.—p. 212.

Influenza in Infants.—This paper is based on studies made by Wollstein and Goldbloom at the Babies' Hospital of the City of New York. Of thirty-six children who had bronchopneumonia and influenza, twelve recovered and twenty-four died, a mortality rate of 66.6 per cent. Of the twenty-four fatal cases, eighteen came to necropsy. These eighteen cases showed a variety of pulmonary lesions making a characteristic picture of congestion, edema, general bronchitis, scattered pneumonia lesions differing in age, but involving two or more lobes; subpleural hemorrhages and pleural exudate. Capillary hemorrhages in the other viscera were constant. The influenza bacillus was grown from every case, but not alone. Pneumococcus Type IV was the most frequent bacterium associated with it. During life the sputum contained *B. influenzae* in thirteen of seventeen cases in which it was searched for. This series of pneumonias was far more severe, more extensive and more highly fatal than was any other group of pneumonia cases observed in the hospital over a similar period of time.

Aplastic Anemia.—The clinical history of Smith's case can be summed up briefly as follows: A boy of 6 who had been apparently well up to the time of the present illness, with the exception of measles eight months previously, came into the hospital with a history of only two weeks illness, with no definite symptoms. The clinical picture and the laboratory findings were roughly those of rather a severe secondary anemia, cause unknown. There had been no history of hemorrhage, or of any more recent infection than the measles. He responded temporarily to iron treatment, but soon became more anemic and progressed rapidly downhill to fatal exitus. There were very slight purpuric manifestations, and an unexplained swelling of the face, accompanied by high fever. The blood picture at first suggestive of secondary anemia, became more definitely that of an aplastic anemia. The degree of anemia was extreme—hemoglobin, 40 per cent.; red count, 1,500,000. The differential white count showed a beginning relative lymphocytosis and a drop in the leukocytic proportion; a good deal of poikilocytosis, anisocytosis and polychromatophilia. Three months after the boy was first seen, the red cells numbered 700,000, hemoglobin, 18 per cent.; an obvious relative lymphocytosis. The immediate cause of death was a failing circulation with dilatation of the heart, accompanied by decompensation. The edema of the lungs was partially responsible as well. At the necropsy there was found an extreme marrow aplasia. The malpighian corpuscles in the spleen gave very definite evidence of prolonged toxic action such as is seen especially in diphtheria, or in any of the prolonged febrile diseases. It is frequently concomitant with measles. Smith is convinced that this is, perhaps, the most obvious answer to the whole story—the prolonged toxic action of the toxin of measles, acting in a cumulative sort of fashion, until the marrow became exhausted.

Parental Nativity and Infant Mortality.—The statistics given by Eastman are taken from the records of the New York State Department of Health in which New York City is not included. It is evident that the several causes culminating in the present high mortality of infants are strongly influenced by the customs and racial characteristics of the various peoples inhabiting the state. Among the foreign born, and particularly the Italians and Slavic races, the principal diseases are those here classed as communicable, respiratory and gastro-intestinal. The superior environment and intelligence of the average native woman is reflected in the comparatively low mortality of her babies from these diseases. The fewer deaths from prematurity and congenital defects among children of Italian, Russian, Polish and Austro-Hungarian parents may possibly be accounted for, in part, by the greater vitality and superior constitution of these infants. If this is true, there is the more reason to deplore the excessive mortality incident to them during the later months of infancy, since it would seem that if it were not for the ignorance of the parents, they actually start life with a better chance of survival then do other children. Compared with the foreign born, the death rate from prenatal causes is exceptionally high among the children of native mothers. On the other hand, in a community composed largely of Italians or Slavs, the principal causes to be combated are those arising from poverty, ignorance, overcrowding and imperfect sanitation.

Modifying Fat Content of Milk.—The method used by Daniels and English consists in allowing the milk to stand on ice until the cream line is distinct—about ten or twelve hours. The cream is then carefully removed, so that as little mixing as possible takes place. For this purpose a Walker-Gordon dipper with a removable bottom has been found most convenient. In order to obtain milk containing 2 per cent. fat, 2 ounces, or 54 c.c., of the removed cream should be added to 24 ounces of the skimmed milk; for a 3 per cent. milk 4 ounces, or 108 c.c., should be returned to 24 ounces of the skimmed milk, and for a 4 per cent. milk 6 ounces, or 162 c.c., should be added. The length of time the milk has stood after boiling is of considerable importance in securing good results with the method, for milk which has stood a too short period contains a varying amount of fat in the skimmed portion.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

March, 1919, **79**, No. 495

Importance of Diagnosis in Pelvic and Abdominal Surgery and Some of the More Common Errors. E. E. Montgomery, Philadelphia.—p. 321.
*Control of Nausea and Vomiting of Pregnancy by Intramuscular Injections of Corpus Luteum Extract. J. C. Hirst, Philadelphia.—p. 327.
Analysis of 262 Operated Cases of Uterine Myomata. L. Broun, New York City.—p. 333.
Technic for Separating Sigmoid and Uterine Adnexa Fused by Inflammation. H. Grad, New York City.—p. 344.
Contraindication to Use of Hydrostatic Bags in Obstetrics. E. T. Hull, New York City.—p. 356.
Gynecologic Obstetric Personnel in Semiprivate Hospital. E. Bishop, Brooklyn.—p. 361.
Cesarean Section: Indications and Limitations in Obstetrics. E. A. Schumann, Philadelphia.—p. 371.
The "Grad Knot": Surgical Self-Compression Knot. H. Grad, New York City.—p. 379.

Control of Nausea and Vomiting of Pregnancy.—In a series of 111 consecutive, unselected cases treated by Hirst with corpus luteum extract 99 (89.2 per cent.) were influenced favorably, showing, in his opinion, that the lack of the normal corpus luteum extract absorption is a factor in the nausea of pregnancy, and that in the great majority of cases the nausea can be relieved by the hypodermic intramuscular injection of corpus luteum extract.

American Review of Tuberculosis, Baltimore

October, 1918, **2**, No. 8

Psychologic Handling of Tuberculous Patient. C. L. Minor, Asheville, S. C.—p. 459.
Influence of Psychic Acts on Progress of Pulmonary Tuberculosis. T. Ishigami, Osaka, Japan.—p. 470.
*Induced Pneumothorax Treatment of Pulmonary Tuberculosis. E. Morris, Oak Forest, Ill.—p. 485.
*Artificial Pneumothorax and Pregnancy. S. A. Slater, Oil City, Pa. —p. 497.
*Artificial Pneumothorax in Tuberculous Pneumonia. H. E. Gammons, Deerwood, Minn.—p. 501.

Induced Pneumothorax Treatment of Pulmonary Tuberculosis.—Morris reports on this treatment as used in the Cook County Tuberculosis Hospital in 202 cases. They have used only the Murphy outfit, with some changes necessitated by the use of atmospheric air instead of nitrogen gas. Instead of using the atmosphere in the room, a long rubber tube is connected at one end with the intake valve of an ordinary aspirating pump and at the other with a metallic bathroom spray loosely fitted with sterile cotton. This end is placed in the outside air, which is then pumped through a bottle of sterile cotton into one filled with a 1:1,000 mercuric chlorid solution, and from this into the inverted cylinder surrounded by boiling water. The needles used are made by filing the end of an 18 gage aspirating needle to an angle of 45 degrees. There is also a nick filed into the needle about one-sixteenth inch from the end. Very good results have been obtained with this outfit.

Artificial Pneumothorax and Pregnancy.—The woman whose case Slater reports has been pregnant twice since pneumothorax treatment was begun. The first pregnancy ended in abortion at three months. The second ended at full term in normal labor without any interruption of the pneumothorax treatment.

Artificial Pneumothorax in Tuberculous Pneumonia.—Gammons suggests that this method of treatment should be used more often in these acute tuberculous infections.

Annals of Surgery, Philadelphia

February, 1919, **69**, No. 2

*Studies in Bone Transplantations: Method of Increasing Osteogenetic Power of Free Bone Transplant. B. Brooks, St. Louis.—p. 113.
*Advantages of Picric Acid over Tincture of Iodin for Disinfection of Skin. C. L. Gibson, New York.—p. 127.
Postoperative Parotitis. J. B. Deaver, Philadelphia.—p. 128.
Frequency of "Strawberry" Gall Bladders. W. C. MacCarty, Rochester, Minn.—p. 131.
*Frequency of Adenomyoma of Uterus. W. C. MacCarty and R. H. Blackman, Rochester, Minn.—p. 135.
Abdominal Drainage. F. Le M. Hupp, Wheeling, W. Va.—p. 138.
*Fractures of Upper End of Humerus. J. H. Stevens, Boston.—p. 147.
Use and Value of Lane Plate. A. H. Harrigan, New York City. —p. 161.

Method of Increasing Osteogenetic Power of Free Bone Transplant.—The object of the experiments described by Brooks was to test the value of a method of increasing the osteogenetic power of the autogenous bone transplant, in order that a defect in the shaft of a bone of an old subject could be bridged by a free bone transplant with a better prospect of ultimate successful regeneration of the defect. Beginning on the fourteenth day after the second operation, the animals used were given intraperitoneal injections of 3 c.c. of a 5 per cent. solution of sodium alizarin sulphonate twice each week until the end of the experiments. The animals were sacrificed at the end of the periods of 23 to 173 days after the second operation, and the bones of the extremities removed for study. The use of the vital stain made it possible to determine the site and amount of all new bone formed from the transplants.

These experiments show a relatively large proportion of instances in which the ordinary bone transplant with periosteum and endosteum failed to regenerate a bone defect when the transplantations were made in animals which were not young. The experiments also show that transplants of growing bone result in a much larger proportion of successes than the normal bone transplants. The success or failure of a bone transplant obviously must be determined by both internal and external factors. The latent power of the osteoblasts to multiply and produce bone is an internal factor and would seem to depend on the intrinsic latent power or regeneration of the bone from which the transplant is taken. The adequate supply of nutrition for growth of the bone-producing cells must come from the bed into which the transplant is placed and is an external factor.

Whether the failure of a relatively large proportion of free bone transplants in old animals is the result of internal or external factors is not clear. It would seem most probable, however, that it was the result of the low intrinsic osteogenetic power of the bones in advanced life. It is also not clear from these experiments whether the growing bone transplant is successful in a larger proportion of instances than the normal bone transplant, because it contains cells with greater power of growth or because the growing tissue with its numerous thin-walled vessels and tissue spaces more readily acquires nutrition from the bed in which the transplant is placed. It would seem more likely that the latter is true. If this is so, then the transplant would possibly succeed in even a larger proportion of instances if the bed into which the transplant is to be placed were also stimulated to grow by previous operative procedure. These experiments show that when there is nonunion of fractured fragments in spite of good approximation of the fragments, the failure of the fracture to unite must be the result of poor regenerative power in bone.

In these experiments, in which only dogs well advanced in life were used, and in which the bones showed power of regeneration less than that in young animals, the conditions were comparable to those existing in clinical cases of nonunion of fracture as a results of poor regenerative power in the bones. The method of using transplants of growing bone resulted in a much larger proportion of successful results than those following the use of normal bone transplants. These experiments also showed that a defect in the bone of an old animal can be successfully repaired by bridging the defect with a homogenous transplant of bone taken from a young animal. In these experiments the growing bone transplants have been transplanted seven to twety-nine days after stimulating growth.

Advantages of Picric Acid Over Tincture of Iodin.—Gibson uses a 5 per cent. alcoholic solution of picric acid as a substitute for tincture of iodin. He has not seen any cases of irritation of the skin. The method has for some time been the routine mode of disinfection of the skin in the British armies.

Frequency of Adenomyoma of Uterus.—Between 1906 and 1918 (October 1) 3,388 fibromyomatous uteri were removed in the Mayo clinic. Two hundred and eleven (6.43 per cent.) of these contained adenomyomas. In 5 cases the tumor was in the fallopian tubes. The last 109 cases of the series were studied by MacCarty and Blackman with reference to certain clinical features which might be associated intimately with the condition. Ninety-five patients (86 per cent.) were married; 41 per cent. gave histories of having had miscarriages; 50 per cent. suffered from profuse and prolonged uterine bleeding, and 31 per cent. from irregular bleeding. The average age of puberty was 14.3 years. Sixty-five per cent. of the married women had borne living children. In 5.5 per cent. of the cases epithelioma of the cervix or carcinoma of the body of the uterus was associated, neither of which conditions bore any apparent relationship to the adenomyomas. In 72 per cent. other pathologic pelvic conditions were associated, such as ovarian cysts, chronic or acute salpingitis, uterine or cervical polypi, cystic cervicitis or prolapsus uteri. In no case without the association of a malignant condition was the clinical diagnosis one of malignancy. In no case

was a positive clinical diagnosis of adenomyoma made previous to operation. The clinical diagnosis was clothed in such terms as fibromyoma or pelvic tumor, both of which diagnoses show recognition of definite pathologic conditions of a neoplastic nature without attempting to specify in terms of detailed pathology.

Fracture of Upper End of Humerus.—Fractures of the upper end of the humerus, i. e., above the insertion of the pectoralis major muscle, according to Stevens, will in nearly all cases conform to three types and their subdivisions. Stevens insists that all should be treated in abduction and external rotation with traction varying from a few days in mild cases to twelve days in complicated ones. Passive motion must be begun early and active motion must follow very quickly if we are to prevent the tendency to restriction of motion. It must be used always with care and with due regard to the anatomy and pathology. In the mild cases it is safe to begin very early since there is little tendency toward displacement. A right-angled wooden splint in the severe cases and a firm pillow splint in the mild cases always with traction is the ideal method of treatment. External rotation in abduction as a treatment is almost an impossibility of accomplishment unless the patient remains in bed. In bed it is the simplest method and not an uncomfortable position for the patient.

Boston Medical and Surgical Journal, Boston

March 13, 1919, **180**, No. 2

Surgery in Cancer. S. W. Little, Rochester, N. Y.—p. 293.
Method of Making Iodo-Tannin-Glycerin Complex. C. J. Enebuske, Cambridge, Mass.—p. 300.
*Record of Fractures Among 10,287 Men Discharged from the Army During November, December and Part of January, 1918 and 1919. I. W. Brewer, Camp Humphreys, Va.—p. 304.
Pneumonia and Empyema. H. Gray, Boston (to be continued).—p. 305.

Fracture Among Men Discharged from Army.—A total of 665 fractures were noted by Brewer among these 10,287 men, making a rate of 64.7 per thousand. In this group 15.2 per cent. of the fractures were of the humerus; 14.8 per cent. were Colles' fractures; 10.9 per cent. were fractures of the phalanges; 8.8 per cent. were fractures of the clavicle; 8.2 per cent. were fractures of the tibia; 7.7 per cent. were fractures of the femur, and 6.0 per cent. were Pott's fractures. Among the rarer fractures were fractures of the malar bone 1, two cases of fracture of the pelvis, and one case of fracture of a vertebra.

California State Journal of Medicine, San Francisco

March, 1919, **17**, No. 3

Bureau of Child Hygiene. L. B. Deal, San Francisco.—p. 74.
Study of Achylia Gastrica by Fractional Method. E. C. Fishbaugh, Los Angeles.—p. 74.
*Hereditary Hemorrhagic Telangiectases. F. F. Gundrum, Sacramento.—p. 78.
Electricity Applied in Gynecology. O. McNeile, Los Angeles.—p. 78.
Some Interesting Surgical Conditions of Kidney and Prostate. W. E. Stevens, San Francisco.—p. 82.

Hereditary Hemorrhagic Telangiectases.—Gundrum reports four cases of this disease occurring in three generations of one family. The lesions were present on the tongue, septum nasi, cheek, ears, eyelids, and face, and each patient was also liable to severe nasal hemorrhage.

Journal of Bacteriology, Baltimore

January, 1919, **4**, No. 1

Relation of B. Botulinus to Forage Poisoning or Cerebrospinal Meningitis in Horses. R. Graham and A. L. Brueckner, Kentucky Agricultural Experiment Station.—p. 1.
*Aerobic Spore-Bearing Bacteria in Intestinal Tract of Children. M. D. Batchelor, Baltimore.—p. 23.
*Non Lactose Fermenting Bacteria from Polluted Wells and Sub-Soil. I. J. Kligler, New York City.—p. 35.
Intensive Nitrite Formation in Solution. A. Bonazzi, Wooster, Ohio.—p. 43.
Bacterial Flora of Mouth and Nose of Normal Horses. E. H. Boyer, Columbus, Ohio.—p. 61.
I. Gas Production by Bact. Pullorum. II. Bact. Pullorum Infections in Adult Birds. III. Relation Between Sucrose-Fermentation and Immunizing Power by B. Avisepticus. P. Hadley, D. W. Caldwell and B. M. Heagh, Rhode Island State College.—p. 65.

Aerobic Spore-Bearing Bacteria in Children.—A bacterial investigation of the dejecta of 74 children was made by Batchelor with the special object of isolating the aerobic spore-bearers. The findings were as follows: *B. cereus*, 32 cases; *B. albolactus*, 17 cases; *B. pseudotetanus*, 9 cases; *B. mesentericus*, and *B. subtilis*, each 6 cases; *B. petasites* and *B. vulgatus*, each 2 cases.

Bacteria from Polluted Water.—Nonlactose fermenting, nonliquefying bacteria were obtained by Kligler from 15 polluted wells and 14 contaminated subsoil samples. In but one instance were members of this group obtained from both the well and soil of the same premises, but even in this case the organisms possessed different biologic and serologic characters. The former belonged to the gas producing paraenteritidis group most common in the intestinal tract of swine, cattle, and other domestic animals. The latter, on the other hand, was a nongas-producing form resembling the bacillus found by Morgan, Lewis and others in the stools of normal individuals, as well as in those of people suffering from diarrhea. Kligler believes that a careful study of the nonlactose fermenting bacilli commonly found in the intestinal tracts of man and domestic animals might furnish the basis for an index of the source of pollution.

Journal of Infectious Diseases, Chicago

March, 1919, **24**, No. 1

*Perfusion Experiment in Study of Cellular Anaphylaxis. W. P. Larson and E. T. Bell, Minneapolis.—p. 180.
*Chlorinated Lime and Halazone in Disinfection of Drinking Water. B. Fantus, Chicago.
*Antigens Used in Wassermann Reaction. E. H. Ruediger, Bismarck, N. D.—p. 204.
*Droplet Infection and Prevention by Face Mask. G. H. Weaver, Chicago.—p. 218.
*Connection of Milksickness with Poisonous Qualities of White Snake Root (Eupatorium Urticaefolium). W. G. Sackett, Chicago.—p. 231.
Growth of B. Coli. R. C. Salter, Ames, Ia.—p. 260.
*Function of Fats in Immune Processes, Pneumococcus and Streptococcus Immunity. C. C. Warden, Ann Arbor.—p. 285.
Formation of Conglutination Thrombi in Liver of Dogs After Injection of Witte's Peptone. J. P. Simonds, Chicago.—p. 297.

Study of Cellular Anaphylaxis.—In studying spontaneous phagocytosis in the liver with India ink the authors found that the ink particles were deposited only in restricted areas of the organ. It was evident that only a small part of the liver was traversed by the perfusing fluid. This observation suggested the possibility of making use of this procedure in studying the course of the perfusing fluid through an organ and in determining to what extent it is possible to wash an organ free of blood. All perfusions, whether of liver, lung, or uterus, give about the same results. It was never possible to wash out all the blood and albumin. The fluid from the exit cannula soon becomes free of albumin and blood, but if the perfusion is discontinued for a few minutes both these substances reappear. By perfusing organs with Locke's solution containing India ink, thus marking the course taken by the fluid through the organ, it was found that a surprisingly small part of the capillary system is really washed out by the perfusing fluid. This technic does not, therefore, remove circulating antibodies completely, as has been assumed, and this type of experiment does not establish the presence of cellular antibodies.

Disinfection of Drinking Water.—Fantus' work was done for the purpose of comparing the disinfectant value of halazone with that of chlorinated lime. He claims that chlorinated lime is a more efficient water disinfectant than halazone, compared on the basis of active chlorin. It is also a great deal cheaper. Hence, there is no reason for employing halazone in water disinfection, except when its superior tablet-making qualities render its use advantageous. Halazone is a better agent for the preparation of water disinfecting tablets. Its action is, however, a rather slow one.

Antigens in Wassermann Reaction.—In the tests reported by Ruediger, made on the serum of fifty supposedly nonsyphilitic persons and thirteen known syphilitics, six different antigens were used. With the serums from fifty clinically nonsyphilitic persons, alcoholic extract of human heart, alcoholic extract of beef heart and alcoholic extract of rabbit

heart gave negative results. Alcoholic extract of dog heart gave positive results with sixteen, or 32 per cent., and alcoholic extract of guinea-pig heart gave positive results with seventeen, or 34 per cent. As no other signs or symptoms of syphilis could be discovered, these were considered false positive results, and, therefore, heart of dog and of guinea-pig are considered unsuitable for the preparation of so-called antigen to be used in the Wassermann reaction. Whenever alcoholic extract of dog heart gave a positive result, the alcoholic extract of guinea-pig heart also gave a positive result; the latter usually reacted somewhat stronger then did the former. With serum from known syphilitics, the alcoholic extract of beef heart and the alcoholic extract of rabbit heart frequently gave stronger positive results than did the alcoholic extract of human heart. The results obtained with alcoholic extracts of dog heart and guinea-pig heart corresponded to those obtained with alcoholic extract of human heart, while the alcoholic extract of sheep heart reacted weaker. When antigen was added fifteen minutes after the complement the same results were obtained as when antigen was added fifteen minutes before the complement. Antigen dilutions of 1:35, 1:45, 1:50 and 1:75 gave results that were identical with those given by a dilution of 1:25. Dilutions of 1:100, 1:200 and 1:300 gave irregular results, sometimes stronger, sometimes identical with and other times weaker than those given by a dilution of 1:25. Dilutions higher than 1:300 usually gave weaker positive results than did the dilution of 1:25.

Prevention of Droplet Infection by Face Mask.—Since June 1, 1916, gauze masks have been used by the nurses of the Durand Hospital. No case of scarlet fever has occurred since masks have been worn. The nurses are instructed to change the mask as soon as it has been known to be grossly contaminated, and never to put the hands to the mask to adjust it, etc., until the hands have been washed thoroughly. Early in 1918, bacteriologic tests showed that the masks then in use did not remove all the bacteria thrown out in the mouth spray. The masks consisted of two layers of gauze, 28 by 24 mesh, but as they were worn but once before washing and resterilizing, shrinkage soon made the openings in the gauze much closer than they were in the new masks.

Experiments made by Weaver demonstrated that gauze will remove bacteria from the air when carried in a moist spray. The efficiency of the gauze as a filter is in direct ratio to the fineness of the mesh and the number of layers used. Furthermore, it was noted that when the subject coughed with mouth wide open few bacteria were driven out, but that an explosive cough with the lips held quite close yielded quite a rich bacterial spray. The coarser gauze allowed a large proportion of the bacteria to pass through, even when six layers were superimposed. The finer gauzes removed many more of the bacteria, and when six and eight layers were used almost all the bacteria failed to pass through. The test was rather severe, as the force used was greater than that made in any spontaneous expiratory effort. Similar results were obtained when the pharynx and tongue had been smeared with a culture of *B. prodigiosus* shortly before the experiments were carried out. There appeared no appreciable difference between dry and moist gauze filtering properties. Since the completion of these studies the masks used in the Durand Hospital have been made of three layers of gauze with a mesh of 44 by 40. The nurses are instructed to wear two superimposed masks, making six layers of gauze, when caring for cases of virulent infections, when secretions are abundant. The gauze used is absorbent.

The experience with masks has been confined principally to their use to protect attendants on the sick from infection. They have been used not only by nurses, but by physicians in their work while taking cultures from throats, doing intubations and examining chests. Masks have also been placed over the faces of mothers while nursing their babies when either one has been infected by diphtheria or has been a diphtheria carrier. There has been considerable reduction in cases of rhinitis, tonsillitis, and pharyngitis among the nurses since masks have been worn. Weaver cautions that endeavors to limit droplet infections should not prevent equally energetic efforts to close other channels of spread of infectious materials.

Milk Sickness and White Snake Root.—Sackett's investigations show that trembles or milk sickness may be due to the ingestion of the toxic substance present in Eupatorium leaves.

Fats in Immune Processes.—The work discussed by Warden in this paper is a continuation of earlier work (abstracted in THE JOURNAL, Jan. 4, 1919, p. 71) in which it was shown that the fats peculiar to certain bacteria and other cells constitute their specific antigens, as shown by complement fixation antibody production in animals inoculated with the antigens, and by a new specific precipitation reaction in vitro between the fat antigens and their appropriate serum antibodies. This paper deals with the quantity of antibody produced in rabbits from inoculations with the pneumococcus and the streptococcus fat antigens and the amount of protection afforded against the organisms.

The facts brought out in this work on the functions of antigenic fats in immunity lead Warden to believe that such antigens are destined to play an important part not only in active immunization of animals and man as prophylactic measure, but also in the treatment of infections. They have to commend them their purity, the dosage by weight, the absence of toxicity, the ease and safety of either subcutaneous or intravenous injection. This form of treatment would appear to be particularly applicable to the types of infections of acute and often fatal character and of brief duration when antibody production is invariably slight or absent altogether, and where toxemia is the dominant symptom, such types being represented by pneumococcus, streptococcus and meningococcus infections. In infections also of a more prolonged course, such as typhoid and paratyphoid fevers, even when antibody is known to be present in the serum, as shown by agglutination tests, at the same time with the antigenic micro-organism, the fat antigen would be presumed to be beneficial both by increasing the antibody production and by furnishing a nidus round which the antigen-antibody aggregate might form and lead to the absorption of complement.

Laryngoscope, St. Louis

February, 1919, **29**, No. 2

Medical Studies on "Feel of the Airship." Deaf Mutes and Normals. E. R. Lewis and H. Horn, M. C., U. S. A.—p. 65.
Injuries of Auditory Canal Resulting from Projectiles. F. E. Cutler, Cleveland.—p. 82.
Occasional Preference of Tracheotomic Bronchoscopy to Per-Oral Route. St. C. Thomson, London, Eng.—p. 88.
Case of Bilateral Acute Suppurative Otitis Media with Symptoms of Thrombosis. O. D. Stickney, Atlantic City.—p. 90.
New Instrument for Tonsillecotmy. H. L. Baum, Denver.—p. 96.
Case of Fatal Epistaxis Following Varicella. C. C. Jones, Cincinnati.—p. 101.
Nasal and Pharyngeal Sequelae of Influenza. E. A. Laessle, Philadelphia.—p. 103.
Removal of Foreign Bodies from Bronchi and Esophagus. J. W. Murphy, Cincinnati.—p. 107.

Medical Record, New York

March 15, 1919, **95**, No. 11

Therapeutic Suggestion Concerning Endocrines. S. W. Bandler, New York City.—p. 429.
Tuberculous Bacteriemia and Massive Exogenous Tuberculous Infection in Man. G. E. Bushnell, Washington, D. C.—p. 432.
Tumors of Blood. E. H. P. Ward, White Plains, N. Y.—p. 434.
Etiology and Treatment of Influenza. O. Paget, Weymouth, England.—p. 436.
Seborrheic Eczema of Lower Lip with Deep Central Cracking. D. W. Montgomery and G. D. Culver, San Francisco.—p. 438.

Minnesota Medicine, St. Paul

March, 1919, **2**, No. 3

*Atypical Clinical Types of Tuberculosis (Concealed). G. D. Head, Minneapolis.—p. 79.
*Treatment of Menorrhagia with Radium. L. J. Stacy, Rochester.—p. 88.
Smallpox in Minnesota. A. J. Chesley, St. Paul.—p. 92.
Carrel-Dakin Treatment of Empyema. F. J. Savage, St. Paul.—p. 95.
Technic of Radium Application. D. T. Quigley, Omaha, Neb.—p. 97.

Atypical Clinical Types of Tuberculosis.—While admitting that tubercle bacilli may lodge in the human body and pro-

duce lesions without causing abnormal sensations which will attract the attention of the host, Head firmly believes, however, from a considerable experience, that these cases are rare, and that if all persons infected could be kept under skilled observation, the disease would make itself manifest in the vast majority of persons in sensations sufficiently pronounced to call their attention to the fact. Head is confident that every person giving a symptom complex, to account for which no definite causal factor can be found, should be given a subcutaneous tuberculin test to determine whether or not a tuberculous lesion is harbored. The confusing clinical picture presented by these slow, low-grade tuberculous toxemias cannot be interpreted otherwise. In 163 such cases in whom, for one reason or another, a subcutaneous diagnostic dose of tuberculin was given, a distinctive temperature rise and other signs indicative of a positive reaction were noted.

By far the largest group of cases fall into what Head terms the "cough and cold" group. These comprise 34 per cent. The second group he classes as the "abdominal distress" group. Twenty per cent. of the whole number fall into this category. The chief characteristic of this group of cases is the ill-defined nature of the abdominal complaint not fitting in well with a diagnosis as applied to disease of any one of the organs to which one ordinarily looks for the production of abdominal symptoms, namely, the appendix, gallbladder, pancreas, stomach or duodenum. About 15 per cent. of the cases fall into what is called the "chest pain" group. Many of the ill-defined neck aches which so-called neurotic women complain of, Head believes, are undoubtedly referred pains from forms of tuberculous pleurisy localized in small patches in the upper part of the chest, oftentimes in the extreme apex. In about 18 per cent. of these cases the chief symptoms complained of by the patients were those of physical and nervous exhaustion. A small percentage, 5 per cent., fall into the "malnutrition" group. In another small group of cases, 5 per cent. of the patients complain of a persistent pain in the back, low down over the lumbar region, either on both sides or the right or left side.

Radium Treatment of Menorrhagia.—In Stacy's opinion radium is the treatment of choice in (1) cases of hemorrhagia of menopause not associated with large fibroid tumors, and in which the possibility of carcinoma is definitely eliminated; (2) cases of menorrhagia in patients between the ages of 35 and 40 years, who have small submucous fibroid tumors, or who have undemonstrable lesions; (3) cases of myomas in which there is a definite contraindication to operation; (4) cases of menorrhagia in the young person, who has resisted all medical treatment, in which very small doses should be given. In the majority of patients of more than 45 years of age; and in all in which there is intermenstrual bleeding, a diagnostic curettement is done by the Mayos previous to the radium treatment. If the clinical history is at all suggestive of a carcinoma of the fundus, a hysterectomy is done, for even a very thorough curettement may fail to reveal a carcinomatous focus. The dosage of radium is gaged by the age of the patient, and by the presence or absence of a tumor.

In the young person without a demonstrable tumor, and when it is desirable to continue menstruation, usually one application of 50 mg. of radium element for from four to six hours (200 to 300 mg. hours radium) is used. In older persons in whom it is desirable entirely to stop menstruation, it has been found that an exposure of 50 mg. for from ten to twelve hours has brought about the desired results. In cases in which large dosage is used, menstruation is usually irregular for about two months and ceases entirely after the second or third month; following the lighter exposures it becomes regular and normal in most instances in about two months.

It is the custom not to repeat the treatment until an interval of three months has elapsed. If, after that time, menorrhagia continues, a second treatment is given. It has been necessary to give a second treatment in ten instances in this series. In eight instances a hysterectomy was done later; one elsewhere one month after the radium treatment. One only of these eight patients had been given a second radium treatment. Reports have been received from 143 of the 175 patients treated and in fifty-five (38.5 per cent.) menstruation had ceased, not to return to the date of the report; in only fourteen did the menstruation become normal; in forty-two it was reported as regular but somewhat profuse, and in thirty (20.9 per cent.) it became profuse. Ninety-two patients report their condition as improved, and twenty-seven as not improved.

Missouri State Medical Association Journal, St. Louis

March, 1919, **16**, No. 3

Forty-Four Cases of Pregnancy Toxemia. G. C. Mosher, Kansas City.—p. 69.
Spasmophilia and Infantile Convulsions. J. M. Brady, St. Louis.—p. 78.
Value of New Ear Tests in Determining Cause of Vertigo. W. M. Reed, Kansas City.—p. 80.

New York Medical Journal, New York City

March 15, 1919, **109**, No. 11

Influenza Therapeutics in History. J. J. Walsh, New York City.—p. 441.
Official Provision for Tuberculous Soldier and What He Should Know About His Disease. S. A. Kopf, New York City.—p. 444.
*Nonspecific Hemoprotein Antigen Treatment of Arthritis. C. Brooks, and F. M. Stanton, Columbus, Ohio.—p. 452.
Rôle of Focal Infections in Psychoses. H. A. Cotton, Trenton, N. J.—p. 454.
Chronic Discharging Ear. C. M. Sautter, New York City.—p. 460.
Acute Posterior Urethritis: Its Seriousness and Proper Management. A. Strachstein, New York.—p. 563.
*Rapid Method for Determining Type of Meningococcus Infection. G. H. Robinson, Baltimore.—p. 464.
Envenomization Suggested as Etiology of Hydrophobia, Yellow Fever, Rocky Mountain Spotted Fever, and Cowpox. A. Young, Hamburg, Pa.—p. 465.
Prophylaxis and Treatment of Influenza. L. T. de M. Sajous, Philadelphia.—p. 465.

Hemoprotein Treatment of Arthritis.—The protein used by Brooks and Stanton for the purpose of combating streptococcus infections was prepared from ox blood fibrin by peptic and hydrochloric acid digestion, the products of this digestion being fractionated by precipitation with ammonium sulphate, the first fractions being rejected and the lower ones used. The protein is prepared in a dry state and kept in hermetically sealed glass ampules. These ampules are sterilized by heat. When used, the dry sterile powdered protein is dissolved in sterile 0.9 per cent. sodium chlorid solution and used at once by intravenous injection with aseptic technic. In some cases intramuscular injections were made. The matter of dosage does not seem to be very definite. Anywhere from 10 to 60 mg. seems to do equally well. The authors use ordinarily about 20 to 25 mg. intravenously and about 30 or 40 or more intramuscularly. Nine cases are cited.

Method for Determining Type of Meningococcus Infection.—The method used by Robinson is as follows: The spinal fluid from the patient is centifuged until clear; 0.5 c.c. of this fluid is added to an equal amount of each of the four type serums; the tubes are thoroughly shaken and warmed to 37 C. in a water bath. If a positive reaction is obtained a distinct flocculent precipitate forms in a few minutes.

Oklahoma State Medical Association Journal, Muskogee

March, 1919, **12**, No. 3

Spastic Colitis. A. W. White, Oklahoma City.—p. 57.
Significance of Abdominal Pain. J. M. Byrum, Shawnee.—p. 60.
Acne. C. H. Ball, Tulsa.—p. 63.
What Can We Do to Improve Humanity? M. A. Warhurst, Sylvian, Okla.—p. 65.
Focal Infections of Genito-Urinary Tract as Cause of Constitutional Diseases. J. Frischer, Kansas City, Mo.—p. 69.

Tennessee State Medical Association Journal, Nashville

January, 1919, **11**, No. 9

Case Illustrating Some Aspects of Focal Infections. R. L. Motley, Dyersburg.—p. 329.
Treatment of Insane in State Hospitals. W. S. Farmer, Nashville.—p. 332.
Surgical Treatment of Hyperthyroidism. E. H. Adkins, Chattanooga.—p. 337.
Pneumonia Following Influenza. H. A. Christian, Boston.—p. 339.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 22, 1919, **1**, No. 3034

British Military Surgery in Time of Hunter and in the Great War. A. Bowlby.—p. 205.
Capacity for Work After Amputations of Lower Extremity. S. T. Irwin.—p. 212.
Use of Ionization in Treatment of Certain Types of Facial Scars. H. S. Carter and A. D. E. Shefford.—p. 214.

Journal of Tropical Medicine and Hygiene, London

Feb. 15, 1919, **22**, No. 4

Dicercomonas Soudanensis. A. J. Chalmers and W. Pekkola.—p. 29.

Lancet, London

Feb. 22, 1919, **2**, No. 4982

British Military Surgery in Time of Hunter and in the Great War. A. Bowlby.—p. 285.
Buried Sequestrum: Post-War Problem. J. Phillips.—p. 291.
*"Propeller" Fracture. A. L. Johnson.—p. 293.
Blood Supply of Muscles. J. Campbell and C. M. Pennefather.—p. 294.
*New Germ of Paratyphoid. L. Hirschfeld.—p. 296.
Dinner Fork in Stomach and Duodenum. K. A. Lees.—p. 298.
Congenital Synostosis. E. S. Chesser.—p. 298.
Case of Contracture of Palmar Fascia. G. de Swietochowski.—p. 298.

"Propeller" Fracture.—Four cases of supracondylar fracture of the right humerus, caused by aeroplane propellers are reported by Johnson. The history of the injury is as follows: To start a nonself-starting aeroplane an air mechanic grasps a blade of the propeller and then turns it. At the same time the pilot opens the throttle in order to flood the cylinders with gas. At the word "contact" from the mechanic the pilot throws the switch into contact with the magneto, causing a spark, which ignites the gas and starts the engine. If the "team work" is faulty the mechanic is liable to be struck down by the propeller before he can escape. This was the history in the four cases forming the basis of this note.

New Germ of Paratyphoid.—In many specimens of blood examined by Hirschfeld for typhoid or paratyphoid, germs have been isolated by culture in bile which behaved bacteriologically like paratyphoid bacillus B, but were not in the least agglutinable by the corresponding specific serum, while the serum of the patient agglutinated the germ even in dilution 1:800. The clinical picture, temperature, etc., of patients infected by this germ is that of paratyphoid fever. From a bacteriologic point of view, there is no difference between the germ in question and the bacillus paratyphoid B. Hirschfeld looks on it as being a serologic variety of paratyphoid B, provoking, clinically, paratyphoid fever. This bacillus can be very virulent. Besides finding the bacillus in one patient who died of the disease, Hirschfeld isolated the same germ postmortem from the heart of a patient who succumbed to paratyphoid.

March 1, 1919, **2**, No. 4083

*Tetanus in British Armies in France Between November, 1916, and December, 1917. S. L. Cummins and H. G. Gibson.—p. 325.
Tetanus Treated in Home Military Hospitals from March, 1917, to April, 1918. D. Bruce.—p. 331.
Chronic Intestinal Stasis. W. A. Lane.—p. 333.
Wheelhouse's Operation for Urethral Stricture. J. B. Macalpine.—p. 334.
Gunshot Injuries of Cervical Nerve Roots. J. S. B. Stopford.—p. 336.
Case of Erythemia. M. H. Fraser.—p. 338.
Dislocation of Teeth. H. M. Savery.—p. 339.
*Intravenous Injection of Potassium Iodid in Tabes Dorsalis. F. J. Devota.—p. 339.

Tetanus in British Armies in France.—Of the 376 cases analyzed by Cummins and Gibson, 252 patients died and 124 recovered, a mortality of 67 per cent. Of the total deaths, 13 were from causes other than tetanus. The 376 cases fall into four groups: (*a*) Cases among British casualties, 291; (*b*) cases among men suffering from "trench feet," 24; (*c*) cases due to accidents and other causes, 48; (*d*) cases among German prisoners of war, 13. There were 278 cases of severe sepsis with 194 fatalities and 74 cases of gas gangrene with 56 fatalities. The time between wounding and the onset of tetanic symptoms varied from eighteen hours to 180 days. Of the fatal cases, the average period was twelve and a half days, and of the 112 recoveries fourteen and nine-tenths days. Tetanus occurred after amputation affecting the upper or lower limbs in 59 cases; 38 patients died as a result of tetanus and 15 recovered, while 6 died from sepsis and other causes after the tetanic symptoms had subsided. Among the 59 cases, 42, or 71.1 per cent., occurred after the amputation of the lower limb, and 16, or 27.1 per cent., after amputation of the upper limbs, while in one case both an upper and a lower limb had been amputated. Among the cases of amputation of the lower limbs in which tetanus subsequently developed the mortality was 76.3 per cent.; in the case of the upper limbs 60.0 per cent. Operative interference was resorted to after the appearance of tetanic symptoms in 27 cases. Of these, 22 died, a mortality of 81.48 per cent.

Nearly one fifth of the total number of cases occurred among persons to whom no inoculation had been given. Of the 376 cases, all but four, each of them fatal, were treated with antitoxin administered by the intrathecal, the intravenous, the subcutaneous, and the intramuscular method. The intramuscular combinations were attended with the smallest mortality and the intrathecal with the highest of the three, the intravenous route presenting dangers which are not encountered in the other three routes. In view of the great importance of making available at the earliest possible moment the largest possible dose of antitoxin, the authors consider that, in any given case, all three routes should be made use of, the intrathecal channel being exploited with the others as far as its limitations permit. As to the value of antitoxin treatment in tetanus, a steady fall in mortality has undoubtedly taken place, but it is urged that the greatest caution should be exercised in attempting to draw definite conclusions as to how this improvement has been brought about. When serum therapy is employed, the authors are strongly of the opinion that the antitoxin should be given at the earliest possible moment and that it should be given in large doses.

Intravenous Injection of Potassium Iodid.—In a typical case of tabes dorsalis seen by Devota, improvement followed after three intravenous injections of potassium iodid (30 grains dissolved in 4 ounces of normal saline solution); the shooting pains in the legs and feet disappeared entirely.

Archives des Maladies du Cœur, Paris

December, 1918, **11**, No. 12

*Traumatic Obliteration of Artery. J. Babinski and J. Heitz.—p. 529.
Experimental Arrhythmia of Undescribed Type. H. Busquet.—p. 550.

Traumatic Obliteration of Arteries.—Babinski and Heitz emphasize the importance of extremely careful analysis of the symptoms because these traumatic lesions generally involve more than the artery; the nerves are frequently injured, and the secondary disturbance from fibrous myositis and gangrene confuse the clinical picture. Other symptoms not directly connected with the obliteration of the arteries may also intervene, changes in the temperature and color of the region, or there may be reflex disturbances, edema or retraction. They review their extensive war experience in this line, saying that sluggishness in electric reactions and in certain reflexes may accompany hypothermia and have the same significance, from the lesser supply of blood, the long immobilization, and possibly reflex vasoconstriction.

Archives de Médecine des Enfants, Paris

February, 1919, **22**, No. 2

*The Rashes in Varicella. J. Comby.—p. 57.
*Tardy Relapse in Meningitis. A. Netter.—p. 72.
*Intraspinal Echinococcus Cyst. J. C. Mussio-Fournier.—p. 80.
*Present Status of Meningitis. J. Comby.—p. 90.

The Rashes in Chickenpox.—Comby applies the term rash to a premonitory eruption preceding the principal eruption in varicella, smallpox, measles, etc. It is probably an infectious or toxi-infectious erythema associated with the principal disease. It may suggest the possibility of a coincident scarlet fever, when such does not exist. In about 90 per cent. of the cases, this rash resembles the eruption of scarlet fever. In

the others it suggests measles or rubeola until the chickenpox eruption becomes unmistakable. He describes nineteen cases, but adds that it occurs probably in not more than 1 or 2 per cent. of the cases of varicella. It usually precedes the principal eruption but exceptionally it may develop the third or fourth day of the eruption or at its close. In any event, it is ephemeral and is not accompanied by desquamation. Demme has reported a case in which the scarlatiniform rash recurred and preceded three waves of the varicella eruption. In one of Comby's cases a boy of 2 presented first a scarlatiniform rash and six days later a measles-like rash, at the beginning and in the course of his varicella. It does not require any treatment. One of his cases teaches that when smallpox is epidemic, it is better to vaccinate every one, young and old alike, regardless of their previous vaccination. In this case a child under 4 had a good vaccination mark but developed the scarlatiniform rash and a day later several papules which proved to be smallpox. Measles developed at about the same time, probably a hospital contagion. The child had been known to have been exposed to smallpox, but on account of its vaccination scar the disease had not been recognized. It was mild with prompt recovery.

Tardy Relapses in Cerebrospinal Meningitis.—Netter remarks that the polyvalent serums now used have rendered relapses in meningitis much less frequent, but in about 1.14 or 1.56 per cent. of his 350 meningitis patients there was a tardy relapse after thirty-three, forty-five, sixty or seventy-three days. In the two cases in which serotherapy could be applied promptly, the children recovered; the others were moribund when first seen. In order to ward off anaphylaxis, a small preliminary injection of serum was given before the serotherapy was started. In one case the relapse was unmistakably the result of an intercurrent measles in the infant of 8 months. In a boy of 11 the relapse followed two months after intercurrent measles plus diphtheria, and proved fatal. In one of the cases a girl of 5 seemed to have entirely recovered after the attack of meningitis, but other members of the family presented cases and the little girl developed the disease anew, after four months, probably from new infection as she had seemed perfectly healthy in the interim, while there was every opportunity for new infection in the environment. One young soldier developed extreme agitation, cyanosis, the feet and hands cold, with acceleration of the respiration and thready pulse, one hour after the intraspinal injection of the antiserum, nothwithstanding that the antiserum had been given subcutaneously twice just before, the first time 1 c.c. of a 10 per cent. solution of the antiserum, followed an hour later by 1 c.c. of the pure antiserum. The anaphylactic reaction was manifest for about three hours before complete disappearance. Two subcutaneous injections of ether seemed to have aided in its subsidence. A similar reaction followed the second intraspinal injection but it was less pronounced and briefer. The Besredka desensitization had evidently not warded off all phenomena of anaphylaxis but it seemed to have rendered them less severe than they might otherwise have been. This patient had been injected with a total of 260 c.c. of the antiserum in January and the relapse occurred in April. The first attack had left some contracture of the right side, and epileptiform symptoms developed after the second attack, suggesting that the latter was the flaring up of a latent focus. Although apparently recovered by June, he still has occasional epileptiform attacks.

Intraspinal Echinococcus Cyst.—Fournier's report was summarized in THE JOURNAL, Dec. 14, 1918, p. 2031, when it appeared elsewhere.

Meningitis.—Comby analyzes Simon Flexner's recent publications on prevention and specific treatment of epidemic meningitis.

Bulletin de l'Académie de Médecine, Paris

Feb. 4, 1919, **81**, No. 5

Proposed Organization of the Medical Force of the Merchant Marine. Committee Report.—p. 132.
*Sequels of Gassing. C. Achard.—p. 135.
*Advisability of Training the Left Hand. Armaingaud.—p. 151.
Radical Cure in Case of Guinea Worm under Arsphenamin by the Vein. E. Jeanselme.—p. 156.
The Médan Infant Asylum during the War. Méry.—p. 158.

Sequels of Gassing in War.—Achard reports on 3,525 cases of persisting injury from war gases. The mustard gas type was responsible for 84 per cent. of these cases of sequelae, but the injuries from gases of the asphyxiating type were the most serious. The degree and extent of the injury of the lung can be estimated approximately by the reduction in the amount of carbon dioxid exhaled per pound and per hour. There may be a tendency to emphysema or to a pseudo-tuberculosis. The importance of not mistaking these sequels of gassing for true tuberculosis is evident; the man's whole future may be blasted by a mistake of this kind. The lungs cast no shadow, the sputum does not contain albumin or only for transient periods; the fever and the physical signs grow less and less, and after several months or a year the man is found free from symptoms. In one such case the fever kept up for thirteen months but then permanently subsided. In another case there were signs of bronchitis and suspicious apical lesions with hemoptysis, weakness, loss of flesh, and fever compelling repose. As late as two years after he had been gassed, the evening temperature often rose to 38.5 C. Not until after two years and four months was the temperature definitely apyretic, and the general condition began to improve. The gas in these two cases was of the chlorin type. The danger of superposed tuberculosis has not proved as great as anticipated, but cases have been encountered now and then. Only six passed through Achard's service, and the gassing may have merely aroused a latent disease. Experiments on laboratory animals seem to confirm that the toxic action of the gas in the lungs does not create an especially favorable soil for the development of tubercle bacilli.

Experience has shown that the sequels on the part of the eyes have not been as numerous or as severe as had been feared; keratitis is rare, but cicatricial deformity of the eyelids and of hands and joints and genital organs is more common, and may require operative correction. Among the other sequels, septicemic infection, fortunately very rare, is a formidable secondary complication of the blistering burns from gas. Anemia and asthenia are frequent, and long persist. Treatment of the sequels of gassing requires nothing special except that respiratory gymnastics will be found useful in helping to overcome the sequelae affecting the lungs. Exercises with the spirometer and the spiroscope and exercise of the chest muscles can be recommended. In the discussion that followed, a leading ophthalmologist stated that he had encountered only three cases of total blindness from gassing. Unilateral lesions were more common, mostly ulcerative keratitis infected with the pneumococcus.

Training of the Left Hand.—Armaingaud appeals to the authorities to take advantage of the opportunity that so many wounded men are being trained to use the left hand to introduce systematic training of both hands into the education of the young. He declares that we have no right to impose on the young this artificial disability by omitting to train both hands. Among the arguments cited is Benjamin Franklin's witty appeal in which "Left Hand" protests against the partiality shown her sister, "Right Hand." Armaingaud urges parents to train both hands from early childhood, and that the school authorities should insist on both hands being used in writing and other exercises. He suggests that some endowed prizes for teachers might promote the cause of training the left hand.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 20, 1918, **42**, No. 36

*Arsphenamin in Treatment of Influenza. I. Bruhl and M. Franck.—p. 1183.
Antiseptic Power in Vitro of Arsphenamin. I. Bruhl and J. Michaux.—p. 1186.
*Oxygen in Cultures of Influenza Diplococcus. Dufour.—p. 1188.
Alopecia after War Wounds of Skull. M. Villaret and Condomine.—p. 1189.
*Anemia and Infectious Jaundice. Ribadeau-Dumas and Nicolas.—p. 1194.
Gangrene of Lung in Influenza. P. E. Weil.—p. 1195.
*Exophthalmic Goiter from Emotional Stress. G. Etienne and G. Richard.—p. 1196; Id.—p. 1199.
The Influenza of 1918. R. Le Clerc.—p. 1204.
Spastic Stenosis of Esophagus with Cancer. R. Savignac and A. Alivisatos.—p. 1209.

Streptococcus Pleurisy in Influenza. Olmer and Vuillet.—p. 1212.
*Acute Nephritis from Chilling. H. Bourges.—p. 1215.
*Walled Off Meningitis in Infants. R. Marcland.—p. 1218.
*Alopecia from Influenza. G. Thibierge.—p. 1223.

Arsphenamin in Influenza.—Bruhl and Franck gave arsphenamin by the mouth and by the vein in thirty-eight cases of the gravest forms of influenza when the epidemic was at its most murderous height, as they say. The death rate in this group was 21 per cent., which they regard as a striking result under the circumstances.

Bacteriology of Influenza.—Dufour reasoned that the prevalence of pulmonary lesions in influenza testifies to the affinity of the germs for oxygen. Consequently he arranged the culture medium so that oxygen bubbled into it at times during the first two days. A diplococcus taking the gram was cultivated from the blood in large numbers by this means, while the nonoxygenated mediums showed no cultures.

Anemia with Infectious Jaundice.—The jaundice in Ribadeau-Dumas' case had been observed at intervals for a year, with periods of fever, and the anemia and weakness finally became extreme. The reds numbered only 530,000 when 250 c.c. of citrated blood were infused. It was followed by a chill, but in five hours the reds numbered 1,300,000. Six days later another transfusion apparently completed the cure; in a few weeks the man's aspect and liver outline were those of health.

Exophthalmic Goiter and the Bombardments.—Etienne and Richard relate that the repeated violent bombardments of Nancy from the big guns and aeroplanes enabled them to study the effect on the endocrine glands of emotional stress. In two women of 24 and 34, exophthalmic goiter developed in an acute form with high blood pressure. In two other young women the blood pressure was below normal. They note further that in some women menstruation was arrested by a bombardment; glycosuria was brought on in other cases. In one man of 36 symptoms of Addison's disease appeared and these were followed by the symptoms of exophthalmic goiter. These latter symptoms subsided in three months but the Addison symptoms persisted to a fatal termination in about eighteen months from the first signs of trouble. The nervous crises appeared first after the destruction and bombardment of La Courneuve at Paris, close to his home. In four days the skin showed bronzing, with patches on mucous membrane, rapid pulse and low blood pressure. This case corroborates the possibility of an emotional origin of Addison's disease as has been demonstrated for cases of exophthalmic goiter under similar stress. In two other cases Addison's disease became superposed on preexisting exophthalmic goiter. Exophthalmic goiter of emotional origin may thus develop under the influence of suprarenal hyperfunctioning, but it can also develop with suprarenal hypofunctioning, and suprarenal trouble may also become superposed on exophthalmic goiter. In two cases of this latter type, the bronzing is extreme, but one man is still at work ten years later, and all the symptoms have subsided in the other.

Acute Nephritis.—The healthy young sailor developed acute nephritis, with 61 gm. albumin in the urine, a few days after being in the water for several hours when his ship was torpedoed. Apparently complete recovery followed in less than three months.

Walled Off Meningitis.—Marcland injected antimeningococcus serum directly into the ventricles of an infant only 4 months old who presented symptoms of a meningitis that had become partitioned off. The meningitis had apparently subsided when the skull began to enlarge, with return of severe symptoms of meningitis, about five weeks after the temperature had returned to normal. About 20 c.c. of the antiserum was injected into one ventricle and 10 c.c. into the spinal cavity, after 70 c.c. of fluid under high pressure had spurted when the ventricle was punctured. The other ventricle was injected three weeks later with 40 c.c. of antiserum, with 10 c.c. in the spinal cavity, and then all symptoms retrogressed. Now, three months later, the child looks well nourished and otherwise normal except for blanching of the disks, but vision has been fairly recuperated in one eye and there is perception of light by the other eye. Notwithstanding that only four injections of antiserum were made in the course of nearly ten weeks, the meningitis and the secondary pyohydrocephalus completely retrogressed. He has compiled 7 cases of walled off meningitis discovered only at necropsy; 18 in adults with 40 per cent. of recoveries after intraventricular injection of the antiserum, and 11 in infants, with recovery in nearly 50 per cent. In the 6 fatal cases a focus was found at some other point in the brain, explaining the lack of success from the intraventricular injection. In the case here reported, the small amount of fluid obtained early in the meningitis by lumbar puncture should have warned that the communication between the brain and spinal cavity was already more or less obstructed, as even then there were signs of hypertension in the brain. The facility of intraventricular puncture in infants should turn the scale in favor of applying it early, at the slightest suspicion of obstruction of communication. Prompt puncture may ward off hydrocephalus and blindness. When slight or no benefit is observed, a third focus, bulbocerebellar, may be assumed. It is isolated from the local treatment above mentioned but might be reached by the orbitosphenoidal route described by Bériel of Lyons.

Falling of the Hair After Influenza.—Thibierge has been impressed by the number of the men and women who complain that their hair is falling out since they had influenza. The alopecia seems more rapid and more intense than usually follows infectious diseases, but the hair soon begins to grow again except with those with an inherited tendency to baldness. Stimulating local applications and general tonic measures aid in the recuperation.

Journal de Médecine de Bordeaux

Feb. 15, 1919, **90**, No. 3

*Grafts of Adipose Tissue. W. Dubreuilh.—p. 47.
*Suture of the Lung for War Wounds. Brau-Tapie.—p. 50.
*Fixation Abscess in Treatment of Influenza. J. Vergely.—p. 57.
*Transient Epidemic Amaurosis. Verger and Moulinier.—p. 61. (Society Proceedings.)

Grafts of Fat Tissue.—Dubreuilh has been very successful in remedying deformity from cicatricial retraction of the muscles of the face by introducing a flap of adipose tissue to fill up depressions. He operates under local anesthesia, excising the superficial cicatricial tissue with the epidermis; what is left becomes spontaneously resorbed. The skin around is loosened up for quite a distance so that it can be drawn up to cover the gap. When all is ready for the flap he cuts it from the adipose tissue in the front or side of the thigh. He sutures with very fine catgut; the two ends, each in a much curved needle, are worked in and crossed like the lacing of a shoe, the stitches only 0.5 or 1 cm. apart, the threads crossing each time. The suture is entirely intradermal, and the ends are tied together, cut off close and buried. If the stretch to be sutured is long, he ties the catgut ends and begins anew at different points, thus suturing in relays. As it is difficult to suture over the slippery fat tissue, the suture is made first but left loose. It is an easy matter then to slip the flap of fat under the suture and then draw the threads tight over it. Even if suppuration occurs and the graft is cast off, it is not expelled like a sequester but seems to melt away, and the cosmetic result may be good even with this.

Suture of the Lung.—Brau-Tapie has had recently in his charge sixty-three cases of war wounds of the chest. In eleven operative intervention seemed indicated, and six of these men were evidently saved by it. Resection of the third or fourth rib in the anterior wall for a distance of 5 cm. gives ample access to the lung; from the rear it is almost impossible to draw up any part of the free lung. Even when the wound is in the rear of the lung, it can be reached more readily from the anterior wall. After evacuating all the fluid blood and the clots in the pleural cavity, he rinsed it out with ether, and the pulse and respiration did not seem to be modified by this. His experience teaches that surgical intervention is called for when the pulmonary hemorrhage con-

tinues and the projectile is as large as a nut or larger. Intervention should be complete when possible. The hemothorax consecutive to the intervention should be punctured four or five days later.

Fixation Abscess in Treatment of Influenza Pneumonia.—In Vergely's 143 cases of influenza he never encountered the form with acute pulmonary edema which others have described, but in other bronchopulmonary complications he found the fixation abscess an important adjuvant to the ordinary measures in fourteen cases.

Epidemic Amaurosis.—Verger and Moulinier reported at a January meeting of the Société de Médecine et de Chirurgie of Bordeaux the occurrence of a small epidemic of transient blindness. Three of the five persons on board a small vessel soon after its arrival were taken suddenly sick, and complained of loss of vision but there was no fever; two died within three days, a man and a woman. The man who recovered became blind the fourth day. After twelve days of amaurosis, vision gradually returned, although there were still evidences of optic neuritis. Three other cases of the apyretic amaurosis developed in the same locality, without contact with the first group. One of the men was just recovering from influenza. He told that a veil seemed to be drawn over his eyes, progressing from left to right, shutting off vision completely by the thirty-sixth hour. The veil gradually passed off in the same way, from left to right. No causes of possible common intoxication could be discovered, but in the second group influenza might possibly be incriminated.

Presse Médicale, Paris

Feb. 6, 1919, **27,** No. 7

*Sciatica. J. A. Barré.—p. 57.
*Autovaccines in Treatment of War Wounds. L. Julien and De Lareinty Tholozan.—p. 60.

Sciatica.—Barré's four illustrations show certain objective findings in the leg with sciatica. The discovery of any of them confirms the reality of the complaints of sciatic pain. These signs include a reduction in the temperature of certain zones in the leg affected, especially the lower half of the outer aspect of the leg. The patient must get out of bed for these tests, and walk around a little with bare legs and feet. The lower temperature can then be readily determined by applying the back of the index and middle finger to the skin. The observer's hands must be warm at the time. This hypothermia is often a very early and constant sign of sciatica, and may be the sole objective manifestation of it. The pain probably induces some superficial vasoconstricting reflex in the skin. Other signs reveal hypotonicity in the muscles. As the man kneels on a chair, the normal foot is in slight extension, while the foot on the side with the sciatica is held at an exact right angle; the region just above the heel also looks sunken in. A retromalleolar reflex can also be elicited on the side of the sciatica as the man kneels on a chair. This reflex precedes the Achilles reflex and atrophy of the Achilles reflex precedes the atrophy of the muscles of the leg. In treatment Barré warns against the use of the actual cautery. It does no good and may aid in simulation. When a man with sciatica says he cannot walk without a cane, Barré keeps him in bed until he thinks he can dispense with the cane. In mild cases of sciatica, massage, hot air douches, prolonged baths and rubs with chloroform liniment at first and then turpentine, with relative repose and some sedative, generally answer the purpose. He has had over a thousand cases of sciatica in the last few months. Epidural injections of sedatives and other substances never gave durable benefit. In extremely painful, acute cases, bed rest without moving or rubbing was the rule for the first few days, then wet cupping and mustard pastes along the most painful zones, with sedatives, gave rather prompt results. With this acute pain, ionization with solutions having an aconite base has given very encouraging results. He gives no details of this technic but adds that this simple method deserves wider adoption in the clinic.

Vaccine Therapy of War Wounds.—Julien and Tholozan have found a sensitized autovaccine extremely useful. They sow on gelose a loopful taken from the depths of the wound. After incubating for forty-eight hours, all the colonies that have developed are scraped off and are suspended in 5 c.c. of polyvalent serum. This sensitizes the germs present, and the vaccine thus prepared has the rapid immunizing properties of a prepared serum with the durable immunization conferred by a vaccine. The microbian emulsion is incubated at 37 C. for an hour and a half at least, then centrifuged, the sediment rinsed twice with physiologic serum, then heated twice, for an hour each time, to 50 or 60 C. The germs are then counted and diluted with physiologic serum until there are 50 million per cubic centimeter. Then 1 c.c. of this dilution is injected in the scapula region. Suppurations that had been keeping up interminably were promptly arrested by this vaccine therapy, which they think deserves wide application.

Revue de Chirurgie, Paris

May-June, 1918, **37,** No. 5-6, Pub'd Feb., 1919

*False Actinomycosis. H. Gougerot.—p. 365.
*Dislocation of the Foot Below the Astragalus. E. Quénu.—p. 380.
*Exploratory Arthrotomy of the Knee. P. Descomps and P. Moulonguet. —p. 391.
Secondary Suture of War Wounds. A. Schwartz and H. Lew.—p. 401.
Serotherapy of Local Septic Processes. A. Basset.—p. 419.
Prosthesis for the Leg. J. Amar.—p. 437.
Kapok Dressings. J. Silhol.—p. 463.
Contusion of Spongiosa with War Wounds. de Gaulejac and Nathan. —p. 483.
Anatomy and Physiology of the Forearm. F. Masmonteil.—p. 506.
The Laws of Healing of Wounds. A. Lumière.—p. 549.

False Actinomycosis.—Gougerot warns that a number of other pathologic conditions may simulate the clinical and bacteriologic aspect of actinomycosis: syphilis, cancer and tuberculosis, besides various microbian skin affections and others. In one case described the cheek was supposed to be the seat of an extensive process of actinomycosis, but it proved to be a syphilitic osteomyelitic process, with sequesters and fistulas. In another case the foot was involved; ordinary treatment as for any pyodermatitis cured the lesion in thirteen days after it had been dragging along for three months under treatment for supposed actinomycosis. In two cases cancer simulated the latter, even to the "bacteriologic" findings until the microscope revealed the cancer in an excised scrap. The cancer fistulas discharged granules simulating the granules of the fungus, and filaments took the stain. Biopsy may be the only means to differentiate the case. Tuberculosis is most frequently confused with actinomycosis; even Poncet made this mistake twice. Gougerot has seen it made with tuberculous lesions in the parotid region, in the ilium, and on the chest. Inoculation of guinea-pigs here solved the problem. In one case a fistulous affection of the throat was cured by excision of the focus after failure of all measures addressed to actinomycosis.

Dislocation of the Foot Below the Astragalus.—Quénu discusses luxation inward and forward as well as backward and outward luxation.

Exploratory Arthrotomy of the Knee.—Descomps and Moulonguet describe the technic for extensive arthrotomy in the exceptional cases in which intervention of the kind is required.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Feb. 8, 1919, **49,** No. 6

*Deafness from Chenopodium Poisoning. E. Oppikofer.—p. 161.
*Acute Appendicitis in the Elderly. J. Dubs.—p. 172.

Chenopodium Poisoning and the Hearing.—Oppikofer adds another to the four cases he has found on record in which bilateral deafness developed in consequence of poisoning from chenopodium. The two adults and three children affected all presented symptoms showing severe general poisoning, to which the adult who had taken the largest dose succumbed. The others recovered in a few days to two weeks. He reviews the literature on chenopodium poisoning, saying that in none of the other ten cases on record was the hearing mentioned, so presumably the drug did not induce deafness. Staggering, extreme vertigo and inability to stand without support were recorded in the cases with deafness, suggesting impairment of the vestibular as well as of the cochlear functioning. The optic nerve seems to be more resistant to the

poison than the nerve of hearing. In only one of the total fifteen cases of chenopodium poisoning were visual disturbances noted. The general symptoms are nausea or vomiting, headache, rapid and irregular pulse, abdominal pain, dyspnea, hallucinations, somnolency, cramps, or paralysis, and sometimes jaundice; aphasia in one case. The necropsy findings are not characteristic.

In fifteen cases on record the therapeutic dose had been much surpassed, except in some weakly children. Oppikofer's patient took eighteen times the therapeutic dose, but even this did not free her from the oxyuris. He protests against prescribing a larger amount of the drug than is needed for the special patient. In his case the woman took what was left over in the bottle after the child's treatment was finished. The auditory nerve seems to be especially endangered. In the severer cases slight improvement may occur spontaneously, but the hearing is permanently impaired and the subjective noises are particularly annoying and persisting, still waking the woman at night, after five months, in his case.

Appendicitis in the Elderly.—Dubs states that at the Winterthur Hospital, in the last three years, out of 500 cases of acute appendicitis, 5 per cent. were in persons over 50. This group includes the 0.8 per cent. between 60 and 70, and 0.4 per cent. between 70 and 80. In over 60 per cent. of these elderly patients, the temperature was normal and the pulse rate normal or very nearly so, even when the appendix showed severe destructive processes with suppuration and impending perforation. Notwithstanding the slight impairment of the general health, there was pronounced local tenderness and extreme local rigidity of the muscular wall directly over the appendix region. In some of the cases abnormal local dulness and resistance were pronounced. In children, the general symptoms dominate the clinical picture, while the reverse is observed in the elderly. The mortality in his twenty-five cases was 12 per cent. One woman recovered who had in addition severe diffuse peritonitis and, during convalescence, gangrene of the lung. This low death rate can be attributed to the early arrival of the patients at the hospital although seldom with the correct diagnosis. The tendency to local encapsulation of the process is particularly marked in the elderly.

Gazzetta degli Ospedali e delle Cliniche, Milan

Jan. 9, 1919, **40**, No. 3

Dry Wounds of Large Blood Vessels. C. Oliva.—p. 17.

Jan. 19, 1919, **40**, No. 6

*Recording the Blood Pressure in Children. A. Nizzoli.—p. 41.
The Destructive Action of Syphilis on the Skin. G. Garibaldi.—p. 46.

Jan. 23, 1919, **40**, No. 7

Intensive Quinin Treatment of Malaria. V. Panto.—p. 51.

Jan. 26, 1919, **40**, No. 8

Prophylaxis of Trachoma in Different Countries. E. Scolari.—p. 59.

The Arterial Pressure in Children.—Nizzoli has found that, with children, the Pachon oscillometer is the most convenient method to use and is the most reliable for the minimal pressure. For the maximal pressure, however, the Riva-Rocci is most dependable, for reasons which he enumerates. His study of the blood pressure was done on 2,273 healthy children, from 1 day to 10 years old, and also on a large number of sick children. Children react in an exaggerated manner to anything which induces pain, and yet it is indispensable to record both the maximal and the minimal tension to determine approximately the functional capacity of the heart. The various views of others on the subject are compared with his own experience. Only in a very few cases were the findings somewhat dubious so that he applied both methods or still others.

Pediatria, Naples

February, 1919, **27**, No. 2

*Diphtheria, 1917-1918. S. Maggiorg.—p. 65.
*Functioning of the Mammary Gland. A. Borrino.—p. 84.
*Chemotherapy in Internal Leishmaniosis. R. Pastore.—p. 96.

Diphtheria at Palermo.—Maggiore states that the mortality was 43.7 per cent. in the eighty-nine cases of diphtheria at the children's clinic of the University of Palermo. Three different makes of antitoxin were used, the mortality ranging from 28.2 to 90 per cent. with the different makes. He pleads that the data presented demand state supervision of antitoxin production as an indispensable measure.

Lactation.—In this fourth study of the functioning of the mammary gland, Borrino discusses the difference between the quality of the milk supplied by women who have borne only one child, and those who have borne several children. Among the 800 infants brought to the *consultorio* no difference could be detected in the thriving of the breast fed infants of mothers with one or more children.

Treatment of Internal Leishmaniosis.—Pastore refers to leishmaniosis in children, infantile kala-azar, extolling the benefits from tartrate of antimony and potassium in treatment. This and another preparation of antimony used by Caronia have reduced the mortality from 90 to 10 per cent. at the Palermo children's clinic when the treatment could be instituted before cachexia was pronounced. The disease runs a more rapid course the younger the child, and the doses of the drug have to be very small. It is injected by the vein, and in infants the jugular vein is the most accessible. The initial dose is usually 1 cg., reaching 5 or 10 cg. only after very gradual increase of the dose during several months. The dose is kept below the amount that induces vomiting. The child is weighed often, and the urine supervised. When the weight is no longer running down and the blood picture begins to improve, then the dose can be gradually increased. By this method, untoward incidents are warded off. Children inclined to the exudative diathesis may develop what seems like a toxic dermatitis, but this is not serious. The thymicolymphatic tendency requires greater caution. Intramuscular injection is also useful, but results are much slower in becoming apparent. The tartrate of antimony and potassium is given in a slightly hypotonic solution, that is, about 0.5 per cent. Three or four months are generally required for complete sterilization of the child. Pastore gave the antimony preparation a trial in the form of baths and inunctions, but the results were mediocre.

Policlinico, Rome

Jan. 26, 1919, **26**, No. 4

*Color Tests of Spinal Fluid. G. Genoese.—p. 97.
The Spring and Fall Epidemics of Influenza. V. Calo.—p. 100.
*Quinin in Prophylaxis of Influenza. N. Colalè.—p. 106.
Sequels of Malaria. P. Timpano.—p. 109.

Color Tests of Cerebrospinal Fluid.—Genoese confirms the reliability of Boveri's reaction as a sign of pathologic conditions. This reaction is the change in tint from pink to yellow when 1 c.c. of a 1 per thousand solution of potassium permanganate is poured down the side of a test tube containing 1 c.c. of the cerebrospinal fluid. A yellow zone forms at the line of junction of the two fluids. On shaking the tube, the yellow tint spreads throughout. With normal spinal fluid, the pinkish tint persists unmodified. The promptness with which the tint veers to yellow is an index of the degree of the pathologic modification of the fluid. The reaction can be obtained as instructively by depositing 1 drop of tenth-normal solution of the permanganate on the fluid to be examined, and then agitating the tube. Genoese cites several who have given this test a thorough trial and have never obtained positive results in normal fluids. He has found this reaction especially valuable in children; this simple test revealing whether the limpid fluid was to be regarded as pathologic or not. When the tint veers to yellow almost instantaneously, the fluid is extremely pathologic; in three or four minutes, it is only moderately pathologic; after five or ten minutes the color of the fluid is no criterion. The tint veers even with normal fluid after this interval. He found in thirty children tested, that when the reaction was positive it persisted positive until the child recovered, although the intensity might vary. Tests of other chemicals failed to elicit a similar reaction except with methylene blue in an extremely weak solution in distilled water. The blue tint remains unmodified when to 1 c.c. of the solution in a test tube, 1 c.c. of normal cerebrospinal fluid is added and the tube is agitated. The tint changes instantaneously to greenish with pathologic fluid.

Influenza and Malaria.—Colalè relates that all but three had influenza in a severe form of the 115 malarial patients under treatment in his hospital (Lanceano). Of the fifty with complications on the part of the lungs, forty-two died, the total mortality being 36.52 per cent. All these malarial soldier had been taking quinin abundantly.

January, 1919, **26**, Surgical Section No. 1

*Intestine Graft in Esophagus. G. Razzaboni.—p. 1.
*The Connective Tissue Theory of Cancer. A. L. Soresi.—p. 12.
*Stenosis from Abnormal Appendix. E. Nassetti.—p. 21.
*Syphilitic Popliteal Aneurysm. P. Filadoro.—p. 32.
Varying Behavior of Wounds of Blood Vessels. E. Bussa-Lay.—p. 37.

Esophagus Grafted with Segment of Intestine.—Razzaboni's illustrations show the complete success of some of his operations on dogs, implanting in a gap in the esophagus a segment of intestine taken from the same or another dog or from a cat. Each method proved a success in some cases and failed in others. It was found, however, that the implanted segment shriveled and retracted so that a graft 4 or 5 cm. long became reduced to 1 or 2 cm. and there was always more or less stenosis. The stenosis was most pronounced with the heteroplastic implants. The intestinal tissue became transformed so that not a trace of actual bowel tissue was apparent when the animals were killed. The experiments demonstrate beyond question that extensive loss of substance in the esophagus can be repaired with a free graft from the large or small intestine.

Connective Tissue Theory of Origin of Cancer.—Soresi explains malignant tumors by the following sequence: First, some loss of substance, then the healing over with cicatricial tissue, then the infiltration of this cicatricial tissue with some of the original cells from the tissues on which the cicatricial tissue has developed. These infiltrating cells get shut off from their sister cells, and get imprisoned in the connective tissue without any connection with the mother tissue below. These imprisoned cells retain their vitality but lose their physiologic balance. Then as the imprisoning connective tissue cells grow old and weaker, the original cells are released. Then they start to grow independently, free from the restraints of their connection with the mother tissue, and this is the nucleus of the cancer. He does not believe that the cancer cell is specially malignant per se. Its unbridled multiplication is due only to the fact that the metabolic phenomena of these cells are not in harmony with the physiologic phenomena of the organism. Having been taken out of the milieu in which they were accustomed to live, they have acquired other habits and have become like cretins and idiots, of filthy and destructive habits, defiling and destroying their own food and themselves. It would take years to induce experimentally malignant growths by this mechanism, but Soresi's attempts in this line had given hints of promising results when he dropped this research to serve in the war. He hopes that others may be inclined to carry it on.

Stenosis from the Appendix.—The appendix in Nassetti's case was 21 cm. long and had wound around the cecum and closed its lumen.

Syphilitic Popliteal Aneurysm.—Both men in Filadoro's two cases were over 40. In one, after a few days of pains in the popliteal region, the aneurysm rapidly developed and was soon the size of an orange; in the other case there were pains in both knees and a small tumor became evident in one popliteal space in the course of six weeks. Under vigorous iodid, mercury and arsenic treatment all the manifestations retrogressed in this case without a trace by the end of the third month of hospital treatment. In the first case no benefit was apparent from medical measures until after the removal of the large tumor. In both, the syphilis was of about twenty years' standing, but spirochetes were found in the wall of the vessel.

Riforma Medica, Naples

Jan. 18, 1919, **35**, No. 3

*Phenol in Treatment of Influenza. S. Orlando.—p. 49.
*Lethargic Encephalitis. G. Molinari.—p. 50.
Present Status of Acute Pancreatitis. E. Aievoli.—p. 51.
Vaccine Rash. R. Rummo.—p. 53.
The Medical Relations between Italy and France. R. Lépine.—p. 58.

Phenol in Treatment of Influenza.—Orlando relates that 100 per cent. recovered of the influenza patients given phenol, but he adds that he did not attempt this treatment in the practically moribund cases. The promptest and best results were obtained with it by the vein, but highly satisfactory results were realized with intramuscular injections and by the mouth. He injected daily into the muscle, 5 c.c. of phenol, on each side, at 2 per cent. He also gave it by mouth in doses up to 1 gm. per day. Some patients were given it by the mouth alone, together with 300 gm. water and 50 gm. syrup of anise. The results were equally good, but recovery was slower, up to ten days. The kidneys did not seem to suffer from the phenol; preexisting albuminuria sometimes subsided under it. He declares that the phenol method of treating influenza not only has proved its usefulness but is being more commonly adopted, and the results are favorable and concordant. He urges others to resort to phenol from the first, saying that if they do this they will behold a mild course of the epidemic disease and no mortality.

Lethargic Encephalitis.—Molinari's article is the second of a series on this disease which the *Riforma Medica* states seems to be making its appearance in Italy. Certain physicians here and there are whispering apart on the possibility that this may be the explanation of certain puzzling clinical cases in the dramatic progress of the influenza pandemic. The febrile pandemic is still existent, he says, and this *stupore epidemico* seems to have come to compete with it. The present article outlines the symptoms and total clinical picture, to aid in its recognition.

Rivista di Clinica Pediatrica, Florence

January, 1919, **17**, No. 1

*Quantitative Determination of Indican and the Ethereal Sulphates in Infants' Urine. L. Maccone.—p. 1.

Indican and the Sulphates in Infants' Urine in Health and Disease.—Maccone remarks that on account of the difficulty of obtaining the total twenty-four hours' urine of infants he had to be content with specimens collected at different hours. There is probably not as much difference between the day and night urine of infants as later in life. Of the eighteen infants whose urine was systematically examined, twelve were less than a year and the oldest was only 17 months old. The children fed on cow's milk had a much larger indican and ethereal sulphates content than the breast fed, and the dyspeptic children had much more than the healthy children. The maximum was found in the children of the alimentary decomposition type, and those with grave digestive disturbances. Not a trace of either indican or ethereal sulphates was found in the healthy breast fed infants, and healthy artificially fed infants presented only traces of them. With severe digestive disturbance, up to 1 or, exceptionally, 2 cg. of indican was found per day, but the amounts were reduced to traces in the children with extreme athrepsia. With inflammatory processes in the intestines, the output of aromatic substances rose and fell parallel to the severity of the inflammatory symptoms except when there was much diarrhea. In three infants with athrepsia, he found traces of glucose in the urine.

Rivista Critica di Clinica Medica, Florence

Jan. 11, 1919, **20**, No. 2

Influenza. F. Schupfer.—p. 13. Commenced in No. 1, p. 1.

Brazil Medico, Rio de Janeiro

Dec. 14, 1918, **32**, No. 50

*Gangrene of Lung. S. V. de Almeida.—p. 393.

Gangrene of the Lung.—Almeida reports two cases, one in a boy of 6, in which gangrene of the lung followed pneumonia. The other was in a man with chronic malaria. The focus in the lung was reached by resection of a rib in the boy; in the man, conditions were too grave to permit such an extensive operation and intervention was restricted to incision and ample drainage with two tubes. The diagnosis was positive although the roentgen rays were not applied, and both patients completely recovered. In a third case, of bronchial

origin, the patient recovered under medical measures alone. In the pneumonic and pleuritic cases operative measures are indispensable. He adds that resection of a rib is extremely simple, and marvelous in its effect. Only when there are several foci and they are small, medical treatment might have to be the sole resource.

Dec. 21, 1918, **32**, No. 51

Experimental Trypanosomiasis. M. Torres and J. Villaça.—p. 401.
*Blood Pressure in Malaria. C. Fraga and E. Boaventura.—p. 402.
*Glycerin in Conservation of Serums. A. Moses.—p. 403.

Blood Pressure in Acute Malaria.—Fraga and Boaventura have been making a special study of the arterial tension in different stages of malaria, finding that the blood pressure is subnormal, both the maximal and the minimal tension. This suggests the necessity for suprarenal treatment to supplement quinin in treatment of acute malaria, as the hypotension is a sign of sympathetic-suprarenal insufficiency. Fraga called attention last year to the characteristic difference in the tension and in the pulse when they were taken reclining and again when the patient stood up for the tests. He emphasized the importance of this orthostatic tachycardia as a sign of suprarenal insufficiency.

Conservation of Immune Serums with Glycerin.—Moses relates that the addition of chemically pure and neutral glycerin to hemolytic serums, complement fixators, agglutinating and precipitating serums serves to protect them against contamination and renders them durable. He advises using 50 per cent. glycerin. With this the serums can be kept in glass without fusing. He has found that the glycerin aided in the conservation of serum from patients, so that the Wassermann reaction or fixation of complement test could be applied with full precision months or even a year later.

Reforma Medica, Lima

January, 1919, **5**, No. 53

*Scientific Pan-Americanism. C. E. Paz Soldan.—p. 3.
*Necessity for Unification of Scientific Efforts. E. Escomel.—p. 4.
*Influenza in Lima. C. E. Paz Soldan.—p. 5.

Scientific Pan-Americanism.—See news columns, March 22, 1919, p. 879.

The Instituto Oswaldo Cruz in Brazil.—Escomel was much impressed by the advantages of the organization of scientific efforts as he witnessed the working of the Instituto Oswaldo Cruz at Rio de Janeiro with its numerous branches scattered over the country. They are independent institutions to a certain extent, like the Butantan Snake Institute, but form part of a great whole which has the benefits of organization and a directing plan, an esprit de corps, emulation and devotion in scientific research and the production of therapeutic serums, vaccines, etc. He pleads for the establishment of a central institution of the kind in Peru.

Influenza in Peru.—Soldan relates that influenza appeared at Lima in a mild form in October, but the epidemic changed to be more serious toward the close of November, and by the end of the year the mortality totaled 600 deaths above the average. He notes that the deaths from influenza also contributed to raise the mortality from tuberculosis. The schools were closed during the first two weeks of November and the epidemic seemed to be under control when the celebration of the armistice or other reasons caused it to flare up with greater vigor. The Consejo Superior de Higiene took measures, December 17, to provide hospital facilities for the sick, and prohibited certain public gatherings but did not close the cinemas. The only measure that had been officially taken before this date was a decree dated November 28 for compulsory notification of cases of influenza, but this was not enforced.

Repertorio de Medicina y Cirugia, Bogotá

January, 1919, **10**, No. 4

*Premature Separation of Placenta. M. Canales.—p. 172.
Psychology and Modern Penal Laws. J. Bejarano.—p. 175.
Colored Glasses for Photophobia. V. Ribon.—p. 186.
Infant Feeding. R. Diaz V.—p. 194.

Premature Separation of the Placenta.—Canales was summoned to a woman of 42 nearly at term with her fifteenth pregnancy. A sudden agonizing pain and flood of blood from the vagina could not be explained by placenta praevia or rupture, only by premature separation of the placenta, which proved to be the case. The fetus was dead; the anemia from the severe hemorrhages was effectually combated. He cites authorities to show the rarity of this mishap, one in 7,000, one in 1,000, one in 800, according to different writers. The mortality of the mothers is said to average 60 per cent., and of the fetus 100 per cent. All recommend rapid clearing out of the uterus. Cesarean section is usually out of the question on account of the losses of blood. None of the causes usually invoked existed in the case here reported except the large number of preceding pregnancies. When the fetus and vagina had been expelled he took the uterus in his hands and expelled further a great quantity of clots, following this with an injection of pituitary extract. Under this, retraction promptly occurred while the ice-cold woman was warmed and stimulants given.

Semana Medica, Buenos Aires

Dec. 26, 1918, **25**, No. 52

*Conservative Treatment of Rupture of Uterus. Chamorro.—p. 755.
*Partitioned Off Pleurisy with Effusion. M. E. Pignetto.—p. 758.
Mortality from Influenza. E. R. Coni.—p. 760.
*Errors in Conception of Tuberculosis. M. R. Castromán.—p. 761.
Prophylaxis of Tuberculosis. W. Alvarez.—p. 775.
Sugar in Treatment of Tuberculosis. J. S. Picado.—p. 781.
*Influenza in Paraguay. M. A. Moreno.—p. 785.
Psychology of the Aviator. II. J. A. Lopez.—p. 786.

Conservative Treatment of Rupture of Uterus.—Chamorro applied in a case described the method advocated by Boero at the International Medical Congress in 1910. The rupture was transverse and fully 10 cm. long, in the anterior face of the lower segment of the uterus, and the woman, a novipara, exhibited the symptoms of shock. Chamorro succeeded in grasping with his fingers the upper lip of the rupture at the extreme right, while an assistant forced down the uterus by pressure from without. A firm grasp with forceps was taken as the fingers let go, and the same procedure was repeated with the upper lip at the extreme left. By this means the whole of the upper lip was drawn down, closing the gap as one lip lapped over the other, the peritoneal aspect of one in contact with the uterine surface of the other. Gauze was packed in tight to hold the parts in position. The handles of the forceps were wrapped in gauze and the vagina packed firm, and the patient placed in Fowler's position, with ice to the abdomen and permanent proctoclysis. Seventy-nine hours later the forceps were removed, the last ones first. The temperature kept normal till the fifth day when a slight rise was combated with a purgative. There had not been much loss of blood, not over 300 gm., and recovery was smooth. Reexamined several months later the overlapping tissue can be felt as a linear scar, about 1 cm. wide, where the one lip laps over the other, and there has been no further disturbance at any time. Chamorro adds that the success in the case confirms that obtained constantly in other cases.

Blocked Pleurisy.—Pignetto relates that in puncturing the pleural effusion in a man of 45, after about 200 gm. of fluid had been evacuated, the man exhibited symptoms of distress and coughing and no fluid could be aspirated. Another trocar was introduced at a point farther along, and here the fluid flowed freely, 350 gm. being thus aspirated. The pleurisy was of the serofibrinous type and the man was a hard drinker, but recovery after the evacuation followed the usual course.

Vaccine Therapy of Tuberculosis.—Castromán writes from Montevideo to emphasize the importance of the mutations of the tubercle bacillus, and the necessity for taking them into account in vaccine prophylaxis and therapy in tuberculosis. He accepts Ferran's theory that the Koch bacillus represents merely the third or gamma stage in the evolution of the bacillus from an atoxic alpha form which induces the predisposing phlegmasia. The vaccine from this nonacid resisting, alpha form is the true prophylactic, he reiterates.

Influenza in Paraguay.—Moreno's experience with the mild and grave forms of influenza when it swooped down on Paraguay repeats what was observed in other countries.